

# **Model Floodplain Ordinance**

**for Communities Within Northeastern Illinois**

**Illinois Department of Natural Resources  
Office of Water Resources  
&  
Northeastern Illinois Planning Commission  
July 1996**





## PREFACE

Floodplains and their associated stream, wetland and shoreline areas are among the State's greatest assets, because of multiple benefits related to environmental quality, natural resource management, and recreational opportunity. Floodplains are generally best able to provide these benefits if kept in a natural condition. Alterations of floodplains often have resulted in increased flood and stormwater hazards, reduced water quality, loss of habitat and recreational opportunities and poor aesthetics within communities. Wherever possible, the natural characteristics of floodplains and their associated water bodies should be preserved.

Unfortunately, unwise development practices and lack of planning have resulted in flooding for which mitigation has been sought through stream modifications such as channelization and reservoir construction. Such modifications may be costly to build and maintain and certainly do not provide for a full range of floodplain benefits, such as aquatic habitat, even though many millions of dollars have been spent to improve the water quality in the channels or watercourses within the floodplains. Often, the preservation of natural floodplains may have been more cost effective. In some situations, flood protection and other stream benefits can be achieved by remedial activities which restore natural characteristics of previously altered floodplain corridors.

In other instances, flood and stormwater problems simply cannot be addressed by natural floodplains and severe measures must be undertaken; similarly, intense demands for water-dependent recreational or commercial activities necessitate localized modifications within floodplains. Decisions to alter floodplains, and especially floodways and streams within floodplains should be the result of a careful planning process, which evaluates resource conditions and human needs. A well thought out and officially adopted plan is the best basis for land use regulations which affect the use and development of land.

Some citizens have verbally contested the legality and constitutionality of floodplain ordinances. And, in certain cases, the issues have been taken to the courts. Experience in various parts of the country, where such ordinances have been tested in the courts, reveals that when the purposes of such an ordinance have been clearly defined and the provisions judiciously enforced, the ordinances have been sustained. Restrictions, no matter how severe, are likely to be upheld if nuisances and threats to public health, safety and welfare are prevented. The purposes described here cover the broad range of circumstances for which protection of public interests is sought by enactment of this Ordinance. The rationale for this type of regulation is significantly strengthened if the regulation is an outgrowth of a planning process which establishes public policy and which has involved significant citizen participation and input.

This ordinance is intended for use in the following six counties of Northeastern Illinois: Cook, DuPage, Kane, Lake, McHenry, and Will. The adoption of this ordinance (or one that also satisfies the minimum federal and state requirements) is required of all communities which participate in the National Flood Insurance Program (NFIP).

Public Act 85-905, approved by the Illinois Legislature, and signed into law by the Governor on November 18, 1987, specified that the Illinois Department of Natural Resources, Office of Water Resources (IDNR/OWR) may delegate its permitting responsibilities to local units of government. Once your community has adopted this Ordinance, or an ordinance meeting the minimum federal and state requirements, and that Ordinance has been approved by IDNR/OWR; then your community may choose to be delegated the floodway permitting responsibilities.

P.A. 85-905 and P.A. 85-1266 provided additional authority to counties (55 Illinois Compiled Statutes, 5/5-10-62) to address floodplain and stormwater management issues under the provisions of the Stormwater Management Act. This legislation provides the authority and basis for many of the recommendations of the Northeastern Illinois Planning Commission (NIPC) that are contained within this model ordinance.

This ordinance is slightly longer than its predecessor. This increase in length is primarily a result of improved formatting to enhance the readability of the document. It is suggested that each community keep the Model Floodplain Ordinance on file because explanation and commentary on the regulations are provided in the right-hand margin. Copies of the ordinance can be obtained from:

IDNR/OWR  
201 West Center Court  
Schaumburg, Illinois 60196  
(847) 705-4341

Copies can also be obtained from NIPC for a nominal charge:

NIPC  
Publications Department  
222 South Riverside Plaza, Suite 1800  
Chicago, Illinois 60606  
(312) 454-0400

Electronic copies of the ordinance can be obtained in IBM Microsoft Word or Word Perfect formats by sending a 3.5" disk to IDNR/OWR or for a nominal charge from NIPC.

For information and technical assistance on the "recommended" language in the ordinance, contact NIPC's Natural Resources Department.



## HOW TO USE THIS ORDINANCE

The Model Floodplain Ordinance is drafted to reflect the minimum requirements of the Federal Emergency Management Agency (FEMA) for eligibility of units of government in the National Flood Insurance Program, and the minimum requirements of the Illinois Department of Natural Resources, Office of Water Resources (IDNR/OWR - formerly IDOT/DWR) concerning floodway construction and construction in designated and non-designated floodways that drain more than one square mile. Communities are encouraged to include more restrictive language. This Ordinance is intended to protect the hydrologic and hydraulic functions of floodplains and watercourses, and their related water quality and habitat functions as well as protect structures and their inhabitants. Presently, the vast majority of the waters of the State are designated as General Use waters and are to be protected for the uses of aquatic life, primary contact, agricultural and industrial water supply, and aesthetic quality. Waters of the State include natural and artificial, public and private stream channels, including headwaters. Experience in recent years in assessing the effects of development on both flooding and stream uses has led to a conclusion that a conservative, holistic floodplain management policy is essential to minimize public and private damages and to protect public benefits related to stream uses. The rationale for this type of regulation is significantly strengthened if the regulation is an outgrowth of a planning process which establishes public policy and which has involved significant citizen participation and input.

The minimum requirements established by FEMA and IDNR/OWR are included in the Model Ordinance in a normal type. The normal type also includes standard language used in floodplain ordinance statewide. Recommended requirements by IDNR/OWR and NIPC designed to preserve and enhance water quality, habitat, recreational opportunities, aesthetics, and/or provide an additional margin of safety are in ***bold italics***. Any commentary referring to these additional requirements is also in ***bold italics*** in the commentary column to the right of the corresponding Ordinance text.

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**ORDINANCE**

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**COMMENTARY**

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**MODEL FLOODPLAIN ORDINANCE FOR  
COMMUNITIES WITHIN NORTHEASTERN  
ILLINOIS  
(CITIES, VILLAGES)**

**ORDINANCE NO. \_\_\_\_\_**

An Ordinance Regulating Development in Special Flood Hazard Areas

Be it ordained by the (Board of Trustees, City Council) of the (Village,  
City) of \_\_\_\_\_, Illinois, as follows:

**Section 100.0 Index**

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**Section 200.0 Purpose**

This Ordinance is enacted pursuant to the police powers granted to this (Village, City) by 65 ILCS 5/1-2-1, 5/11-12-12, 5/11-30-2, 5/11-30-8, and 5/11-31-2 (1994). *The purpose of this Ordinance is to maintain this (Village's/City's) eligibility in the National Flood Insurance Program; to minimize potential losses due to periodic flooding including loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare; and to preserve and enhance the quality of surface waters, conserve economic and natural values and provide for the wise utilization of water and related land resources. This Ordinance is adopted in order to accomplish the following specific purposes:*

This section gives the reasons why this Ordinance is needed. In this case, it also explains why floodway development is unwise. The purpose and intent are broadly delineated in order to establish the public purpose and benefit (i.e. interest) on which the legality of this exercise of the police power is based.

If the adopting political body is a County, then the County or the County Board must be placed in all notations which now read (City, Village) or (City Council, Board of Trustees). In addition, Section 200.0 should read:

This Ordinance is enacted pursuant to the police powers granted to this County by the 55 ILCS



- 200.1 To meet the requirements of 615 ILCS 5/18g Rivers, Lakes and Streams Act.
- 200.2 To assure that new development does not increase the flood or drainage hazards to others, or creating unstable conditions susceptible to erosion;
- 200.3 To protect new buildings and major improvements to buildings from flood damage;
- 200.4 To protect human life and health from the hazards of flooding;
- 200.5 To lessen the burden on the taxpayer for flood control projects, repairs to flood-damaged public facilities and utilities, and flood rescue and relief operations; and
- 200.6 To make federally subsidized flood insurance available for property in the (City, Village) by fulfilling the requirements of the National Flood Insurance Program.
- 200.7 To comply with the rules and regulations of the National Flood Insurance Program codified as 44 CFR 59-79, as amended.
- 200.8 *To protect, conserve, and promote the orderly development of land and water resources;*
- 200.9 *To preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.*

## Section 300.0 Definitions

For the purposes of this Ordinance, the following definitions are adopted:

- 300.1 "Act" "An act in relation to the regulation of the rivers, lakes and streams of the State of Illinois", 615 ILCS 5/5 et seq.
- 300.2 "Applicant" Any person, firm, corporation or agency which submits an application.
- 300.3 "Appropriate Use" Only uses of the designated floodway that are permissible and will be considered for permit issuance. The only uses that will be allowed are as specified in Section 802.0.

Although this ordinance requires that an applicant obtain a permit for a dam, where applicable, from IDNR/OWR, this ordinance is not meant to serve as a Dam Safety ordinance, nor does it imply that this duty is delegated to the local government.

When interpreting this Ordinance, the definitions found in this section should be used. Any words not found in this section should take the standard definition found in the dictionary

NFIP definitions are in 44 CFR 59.1. IDNR/OWR definitions are in 92 Ill. Adm. Code 708

*NIPC policy considers the following general categories as appropriate uses: public flood control projects, public recreation and open space uses, water dependent activities and crossing roads and bridges. A more specific definition of appropriate uses, and the distinctions between NIPC and IDNR/OWR appropriate uses, can be found in Section 802.0. In general, NIPC recognizes fewer activities as appropriate uses of the floodway.*

300.4 **"Base Flood"** The flood having a one-percent probability of being equaled or exceeded in any given year. The base flood is also known as the 100-year frequency flood event. Application of the base flood elevation at any location is as defined in Section 600.0 of this Ordinance.

300.5 **"Building"** A structure that is principally above ground and is enclosed by walls and a roof. The term includes a gas or liquid storage tank, a manufactured home, mobile home or a prefabricated building. This term also includes recreational vehicles and travel trailers to be installed on a site for more than 180 days, unless fully licensed and ready for highway use.

300.6 **"Channel"** *Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or man-made drainageway, which has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.*

300.7 **"Channel Modification"** *Alteration of a channel by changing the physical dimensions or materials of its bed or banks. Channel modification includes damming, rip-rapping (or other armoring), widening, deepening, straightening, relocating, lining and significant removal of native vegetation from the bottom or banks. Channel modification does not include the clearing of dead or dying vegetation, debris, or trash from the channel. Channelization is a severe form of channel modification involving a significant change in the channel cross-section and typically involving relocation of the existing channel (e.g. straightening).*

300.8 **"Compensatory Storage"** An artificially excavated, hydraulically equivalent volume of storage within the SFHA used to balance the loss of natural flood storage capacity when artificial fill or structures are placed within the floodplain. The uncompensated loss of natural floodplain storage can increase off-site floodwater elevations and flows.

300.9 **"Conditional Approval of a Designated Floodway Map Change"** Preconstruction approval by IDNR/OWR and FEMA of a proposed change to the floodway map. This preconstruction approval, pursuant to this Part, gives assurances to the property owner that once an Appropriate Use is constructed according to permitted plans, the floodway map can be changed, as previously agreed, upon review and acceptance of as-built plans.

300.10 **"Conditional Letter of Map Revision (CLOMR)"** A letter which indicates that FEMA will revise base flood elevations, flood insurance rate zones, flood boundaries or floodway as shown on an effective Flood Hazard Boundary Map or Flood Insurance Rate Map, once the as-built plans are submitted and approved.

A channel includes on-stream lakes and impoundments. For purposes of this Ordinance, a channel does not include very small headwater swales or ditches which generally would not be mapped on U.S.G.S. 7.5 minute quadrangle maps. The regulation of small headwater swales and ditches is more appropriately addressed in a stormwater management ordinance.

*It is recommended that the maps which explicitly delineate regulated channels be adopted as part of this Ordinance.*

*Floodway modifications, except for the purpose of appropriate uses, as defined in Section 802.0, are contrary to NIPC policy.*

Although a conditional approval of a regulatory map change is approved, the use of the site must still be an appropriate use as defined in 92 Ill. Adm. Code Part 708.



**300.11 "Control Structure"** *A structure designed to control the rate of flow that passes through the structure, given a specific upstream and downstream water surface elevation.*

**300.12 "Dam"** All obstructions, wall embankments or barriers, together with their abutments and appurtenant works, if any, constructed for the purpose of storing or diverting water or creating a pool. Underground water storage tanks are not included.

**300.13 "Designated Floodway"** The channel, including on-stream lakes, and that portion of the floodplain adjacent to a stream or watercourse as designated by IDNR/OWR, which is needed to store and convey the existing 100-year frequency flood discharge with no more than a 0.1 foot increase in stage due to the loss of flood conveyance or storage, and no more than a 10 percent increase in velocities.

- (a) The floodways are designated for \_\_\_\_\_ (river, creek, stream) on the Flood Boundary and Floodway Map prepared by FEMA (or the Department of Housing and Urban Development) and dated \_\_\_\_\_ and for \_\_\_\_\_ (river, creek, stream) on the Regulatory Floodplain Map prepared by IDNR/OWR and dated \_\_\_\_\_. When two floodway maps exist for a waterway, the more restrictive floodway limit shall prevail.
- (b) The floodways for those parts of unincorporated \_\_\_\_\_ County that are within the extraterritorial jurisdiction of the (City, Village) that may be annexed into the (City, Village) are designated for \_\_\_\_\_ (river, creek, stream) on the Flood Boundary and Floodway map prepared by FEMA (or Department of Housing and Urban Development) and dated \_\_\_\_\_ and for \_\_\_\_\_ (river, creek, stream) on the Regulatory Floodplain Map prepared by IDNR/OWR and dated \_\_\_\_\_.
- (c) To locate the designated floodway boundary on any site, the designated floodway boundary should be scaled off the designated floodway map and located on a site plan, using reference marks common to both maps. Where interpretation is needed to determine the exact location of the designated floodway boundary, IDNR/OWR should be contacted for the interpretation.

**300.14 "Development"** Any man-made change to real estate, including:

- (a) Construction, reconstruction, repair, or placement of a building or any addition to a building.
- (b) Installing a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer or recreational vehicle on a site for more than 180 days. If the travel trailer or recreational vehicle is on site for less than 180 days, it must be fully licensed and ready for highway use.

The floodway is a high risk area where zoning ordinances and other land use controls should be used to prevent development so as to avoid flood damages and to permit the free passage of floodwaters. The accurate determination of floodways and their limits is of critical importance. It is a complex procedure, requiring detailed engineering studies and the development of considerable hydraulic data.

The basic approach is to first assume the extent of the floodway along the length of the stream. In effect, this also assumes the alignment of the floodway encroachment lines. Then assume that the flood fringes will be completely filled without compensatory storage. New highwater elevations are then computed. If the resulting increase in height of the design flood is significant (greater than 0.1 foot), the encroachment lines are tested at locations further out from the channel center line. On the other hand, if the increase is less than 0.1 foot, the encroachment lines may be moved closer to the center line and the resultant water levels again computed.

IDNR/OWR's Designated Floodway List provides each community with a list of regulatory maps applicable to that community. That list should be placed into the Ordinance at this point. Contact IDNR/OWR regarding correct maps and definitions. For communities which have received the new Countywide Flood Insurance Rate Maps (FIRM) with floodways, the Flood Boundary and Floodway Maps should be replaced with FIRM.

Many communities may only have to adopt portions of definition 300.13, depending on their unique circumstances. For example, a land-locked community would not have to adopt (b).

The definition of development includes those activities which could significantly alter the hydraulics or hydrology of the floodplain, or otherwise interfere with its natural functions. Certain development activities are considered appropriate uses of the floodway, as indicated in Section 802.0, others are not.



- (c) Drilling, mining, installing utilities, construction of roads, bridges, or similar projects.
- (d) *Demolition of a structure or redevelopment of a site.*
- (e) *Clearing of land as an adjunct of construction.*
- (f) Construction or erection of levees, walls, fences, dams, or culverts; channel modification; filling, dredging, grading, excavating, paving, or other non-agricultural alterations of the ground surface; storage of materials; deposit of solid or liquid waste;
- (g) Any other activity of man that might change the direction, height, or velocity of flood or surface water, including extensive vegetation removal;

Development does not include maintenance of existing buildings and facilities such as re-roofing or re-surfacing of roads when there is no increase in elevation, or gardening, plowing, and similar agricultural practices that do not involve filling, grading, or construction of levees.

**300.15 "Elevation Certificates"** A form published by FEMA that is used to certify the elevation to which a building has been elevated.

**300.16 "Erosion"** *The general process whereby soils are moved by flowing water or wave action.*

**300.17 "Exempt Organizations"** Organizations which are exempt from this Ordinance per Illinois Compiled Statutes (ILCS) including state, federal or local units of government.

Cook County communities should add to the end of definitions "such as the Metropolitan Water Reclamation District."

**300.18 "Existing Manufactured Home Park or Subdivision"** A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) has been completed before April 1, 1990.

**300.19 "Expansion to an Existing Manufactured Home Park or Subdivision"** The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

**300.20 "FEMA"** Federal Emergency Management Agency and its regulations at 44 CFR 59-79 effective as of September 29, 1989. This incorporation does not include any later editions or amendments.

**300.21 "Flood"** A general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waves, or the unusual and rapid accumulation or runoff of surface waters from any source.

**300.22 "Flood Frequency"** *A period of years, based on a statistical analysis, during which a flood of a stated magnitude may be expected to be equaled or exceeded.*

**300.23 "Flood Fringe"** That portion of the floodplain outside of the designated floodway.

**300.24 "Flood Insurance Rate Maps (FIRM)"** A map prepared by FEMA that depicts the Special Flood Hazard Area (SFHA) within a community. This map includes insurance rate zones and floodplains and may or may not depict floodways.

**300.25 "Floodplain"** That land typically adjacent to a body of water with ground surface elevations at or below the base flood or the 100-year frequency flood elevation. Floodplains may also include detached Special Flood Hazard Areas, ponding areas, etc. The floodplain is also known as the Special Flood Hazard Area (SFHA).

(a) The floodplains are those lands within the jurisdiction of the (City, Village) that are subject to inundation by the base flood or 100-year frequency flood. The SFHA's of the (City, Village) are generally identified as such on the Flood Insurance Rate Map of the (City, Village) prepared by the Federal Emergency Management Agency (or the U.S. Department of Housing and Urban Development) and dated \_\_\_\_\_.

(b) The SFHA's of those parts of unincorporated \_\_\_\_\_ County that are within the extraterritorial jurisdiction of the (City, Village) or that may be annexed into the (City, Village) are generally identified as such on the Flood Insurance Rate Map prepared for \_\_\_\_\_ County by the Federal Emergency Management Agency (or the U.S. Department of Housing and Urban Development) and dated \_\_\_\_\_.

**300.26 "Floodproofing"** Any combination of structural and non-structural additions, changes or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

**300.27 "Floodproofing Certificate"** A form published by FEMA that is used to certify that a building has been designed and constructed to be structurally dry floodproofed to the flood protection elevation.

**300.28 "Flood Protection Elevation (FPE)"** The elevation of the base flood or 100-year frequency flood *plus one foot of freeboard* at any given location in the SFHA.

The flood fringes are those portions of the floodplain outside of the floodway where floodwaters are usually shallow and slow-moving. They are low risk areas where development may be permitted provided reasonable precautions are taken, such as elevating, filling and non-residential structural floodproofing, and further provided that the capacity of the floodplain to store and convey floodwaters is preserved. The latter may be done by requiring compensatory storage for all volumes of such storage lost through construction and filling. See commentary on "floodway" above.

Maps that indicate the location and extent of floodplains and are available from FEMA (1-800-358-9616) and NIPC (312-454-0400). Questions regarding floodways should be directed to IDNR/OWR, 201 West Center Court, Schaumburg, Illinois, 60196-1096.

If your community is one of those communities that is included under countywide mapping, then there will be no individual FIRM's for your community, and Section 300.25 should be reworded to recognize only countywide maps.

Any ground elevation which is lower than the Base Flood Elevation, and adjacent to the river or stream shall be considered to be in the floodplain.

Contact IDNR/OWR or FEMA for the date of your FIRM. Refer to your flood insurance study to determine which agency (FEMA or HUD) prepared the maps.

*One foot is IDNR/OWR recommended minimum freeboard.*



**300.29 "Freeboard"** An increment of elevation added to the base flood elevation to provide a factor of safety for uncertainties in calculations, *future watershed development*, unknown localized conditions, wave actions and unpredictable effects such as those caused by ice or debris jams.

*In appropriate parts of this Ordinance, a freeboard of one foot or more is recommended. Some local governments presently require a freeboard of two feet or more. The selection of a freeboard elevation for regulation should consider the degree of risk as well as the water body(s) to which it applies.*

**300.30 "Historic Structure"** Any structure that is:

- (a) Listed individually in the National Register of Historic Places or preliminary determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminary determined by the Secretary of the Interior as contributing to the historic district or a district preliminary determined by the Secretary to qualify as a registered historic district;
- (c) Individually listed on the State inventory of historic places by the Illinois Historic Preservation Agency;
- (d) Individually listed on a local inventory of historic places that has been certified by the Illinois Historic Preservation Agency.

**300.31 "Hydrologic and Hydraulic Calculations"** Engineering analysis which determine expected flood flows and flood elevations based on land characteristics and rainfall events.

**300.32 "IDNR/OWR"** Illinois Department of Natural Resources, Office of Water Resources.

**300.33 "Letter of Map Amendment (LOMA)"** Official determination by FEMA that a specific structure is not in a 100-year flood zone; amends the effective Flood Hazard Boundary Map (FHBM) or FIRM.

**300.34 "Letter of Map Revision (LOMR)"** Letter that revises base flood or 100-year frequency flood elevations, flood insurance rate zones, flood boundaries or floodways as shown on an effective FHBM or FIRM.

**300.35 "Manufactured Home"** A structure, transportable in one or more sections, which is built on a permanent chassis and is designated for use with or without a permanent foundation when attached to the required utilities. The term manufactured homes also includes park trailers, travel trailers and other similar vehicles placed on site for more than 180 consecutive days. The term "manufactured home" does not include a "recreational vehicle".

**300.36 "Manufactured Home Park or Subdivision"** A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

- 300.37 **"Mitigation"** Mitigation includes those measures necessary to minimize the negative effects which floodplain development activities might have on the public health, safety and welfare. Examples of mitigation include compensatory storage, soil erosion and sedimentation control, and channel restoration. Mitigation may also include those activities taken to reduce a structure's susceptibility to flooding.
- 300.38 **"New Manufactured Home Park or Subdivision"** Manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) has been completed on or after April 1, 1990.
- 300.39 **"NGVD"** National Geodetic Vertical Datum of 1929. Reference surface set by the National Geodetic Survey deduced from a continental adjustment of all existing adjustments in 1929.
- 300.40 **"Natural"** *When used in reference to channels means those channels formed by the existing surface topography of the earth prior to changes made by man. A natural stream tends to follow a meandering path; its floodplain is not constrained by levees; the area near the bank has not been cleared, mowed or cultivated; the stream flows over soil and geologic materials typical of the area with no substantial alteration of the course or cross-section of the stream caused by filling or excavating. A modified channel may regain some natural characteristics over time as the channel meanders and vegetation is re-established. Similarly, a modified channel may be restored to more natural conditions by man through regrading and revegetation.*
- 300.41 **"Ordinary High Water Mark (OHWM)"** *The point on the bank or shore up to which the presence and action of surface water is so continuous so as to leave a distinctive mark such as by erosion, destruction or prevention of terrestrial vegetation, predominance of aquatic vegetation or other easily recognized characteristics.*
- 300.42 **"Public Flood Control Project"** A flood control project which will be operated and maintained by a public agency to reduce flood damages to existing buildings and structures which includes a hydrologic and hydraulic study of the existing and proposed conditions of the watershed. Nothing in this definition shall preclude the design, engineering, construction or financing, in whole or in part, of a flood control project by persons or parties who are not public agencies.
- 300.43 **"Public Bodies of Waters"** All open public streams and lakes capable of being navigated by watercraft, in whole or in part, for commercial uses and purposes, and all lakes, rivers, and streams which in their natural condition were capable of being improved and made navigable, or that are connected with or discharge their waters into navigable lakes or rivers within, or upon the borders of the State of Illinois, together with all bayous, sloughs, backwaters, and submerged lands that are open to the main



channel or body of water directly accessible thereto.

**300.44 "Recreational Vehicle or Travel Trailer"** A vehicle which is:

- (a) Built on a single chassis;
- (b) 400 square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable by a light duty truck; and
- (d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

**300.45 "Registered Land Surveyor"** A land surveyor registered in the State of Illinois, under The Illinois Land Surveyors Act. (225 ILCS 330/1, et seq.)

**300.46 "Registered Professional Engineer"** An engineer registered in the State of Illinois, under The Illinois Professional Engineering Practice Act. (225 ILCS 325/1 et seq.)

**300.47 "Repair, Remodeling or Maintenance"** Development activities which do not result in any increases in the outside dimensions of a building or any changes to the dimensions of a structure.

**300.48 "Retention/Detention Facility"** *A retention facility stores stormwater runoff without a gravity release. A detention facility provides for storage of stormwater runoff and controlled release of this runoff during and after a flood or storm.*

**300.49 "Riverine SFHA"** Any SFHA subject to flooding from a river, creek, intermittent stream, ditch, on stream lake system or any other identified channel. This term does not include areas subject to flooding from lakes, ponding areas, areas of sheet flow, or other areas not subject to overbank flooding.

**300.50 "Runoff"** *The water derived from melting snow or rain falling on the land surface, flowing over the surface of the ground or collected in channels or conduits.*

**300.51 "Sedimentation"** *The processes that deposit soils, debris, and other materials either on other ground surfaces or in bodies of water or watercourses.*

**300.52 "Special Flood Hazard Area (SFHA)"** Any base flood area subject to flooding from a river, creek, intermittent stream, ditch, or any other identified channel or ponding and shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map as Zone A, A0, A1-30, AE, A99, AH, VO, V30, VE, V, M, E, D, or X.

**300.53 "Structure"** The results of a man-made change to the land constructed on or below the ground, including the construction, reconstruction or placement of a building or any addition to a building; installing a manufactured home on a site; preparing a site for a manufactured home or installing a travel trailer on a site for more than 180 days unless they are fully licensed and ready for highway use.

**300.54 "Substantial Damage"** A building is considered substantially damaged when it sustains damage from any cause (fire, flood, earthquake, etc.), whereby the cost of fully restoring the structure would equal or exceed 50 percent of the pre-damage market value of the structure, regardless of the actual repair work performed.

**300.55 "Substantial Improvement"**

- (a) Any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either, (1) before the improvement or repair is started, or (2) if the structure has been damaged, and is being restored, before the damage occurred.
- (b) For the purposes of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.
- (c) The term does not, however, include either (1) any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions or (2) any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a historic structure.

**300.56 "Transition Section"** Reaches of the stream or floodway where water flows from a narrow cross-section to a wide cross-section or vice versa.

## **Section 400.0 How to Use This Ordinance**

**401.0** The \_\_\_\_\_ shall be responsible for fulfilling all of the duties listed in Section 500.0.

**402.0** To fulfill those duties, the \_\_\_\_\_ first should use the criteria listed in Section 600.0, Base Flood Elevations, to determine whether the development site is located within a floodplain.

**403.0** Once it has been determined that a site is located within a floodplain, the \_\_\_\_\_ must determine whether the development site is within a flood fringe, a designated floodway, or within a SFHA or floodplain for which no floodway has been identified.

The cost of repair must be calculated for full repair to "pre-damage" conditions, even if the owner elects to do less. The total cost of repair includes structural and finish materials, and labor. A substantially damaged building which is repaired must comply with the NFIP requirements for new construction.

This section explains the procedure which the enforcement official is expected to follow when enforcing this Ordinance.

List the title of the official responsible for administering the floodplain Ordinance.

This Ordinance should be administered by a Professional Engineer (P.E.), or a combination of a P.E. and a Building Official. However, a Building Official, who is not a P.E. should not attempt to administer Section 800.0 or 900.0 of this Ordinance.



- 403.1 If the site is within a flood fringe, the \_\_\_\_ shall require that the minimum requirements of Section 700.0 be met.
- 403.2 If the site is within a floodway, the \_\_\_\_ shall require that the minimum requirements of Section 800.0 be met.
- 403.3 If the site is located within a SFHA or floodplain for which no detailed study has been completed and approved, the \_\_\_\_ shall require that the minimum requirements of Section 900.0 be met.
- 404.0 In addition, the general requirements of Section 1000.0 shall be met for all developments meeting the requirements of Section 700.0, 800.0, or 900.0.
- 405.0 The \_\_\_\_ shall assure that all subdivision proposals shall meet the requirements of Section 1100.0.
- 406.0 If a variance is to be granted for a proposal, the \_\_\_\_ shall review the requirements of Section 1200.0 to make sure they are met. In addition, the \_\_\_\_ shall complete all notification requirements.
- 407.0 In order to assure that property owners obtain permits as required in this Ordinance, the \_\_\_\_ may take any and all actions as outlined in Section 1400.0.

## **Section 500.0 Duties of the Enforcement Official(s)**

The \_\_\_\_ shall be responsible for the general administration and enforcement of this Ordinance which shall include the following:

### **501.0 Determining the Floodplain Designation.**

- 501.1 Check all new development sites to determine whether they are in a Special Flood Hazard Area (SFHA).
- 501.2 If they are in a SFHA, determine whether they are in a floodway, flood fringe or in a floodplain for which a detailed study has not been conducted and which drains more than one (1) square mile.
- 501.3 Check whether the development is potentially within an extended SFHA (with a drainage area less than one square mile), indicating that the development would have adverse impacts regarding storage, conveyance, or inundation which would be the basis for the applicant being required to delineate the floodplain and floodway and be subject to the remaining Sections of this Ordinance.*

### **502.0 Professional Engineer Review.**

- 502.1 If the development site is within a floodway or in a floodplain for which a detailed study has not been conducted and which drains more than one square mile, the permit shall be referred to a registered professional engineer under the employ or contract of the (City, Village) for review to ensure that the development meets Sections 800.0 or 900.0.

This section explains the duties of the enforcement official, in enforcing this Ordinance. It also explains what records the official is expected to maintain on file for public inspection.

*Often, one square mile is the minimum regulated watershed size in urban areas. However, substantial local flooding can occur in headwater areas draining less than one square mile, and modifications and fills in these smaller watersheds can greatly exacerbate local and downstream flooding. Wherever possible, regulatory maps should be extended upstream of the one square mile cutoff as far as is practical. U.S.G.S. Hydrologic Atlas series maps provide a source of pre-1971 flood of record information in Northeastern Illinois, which may be useful in making preliminary identifications of headwater and other unidentified floodplains. Increasingly, countywide stormwater management agencies, local governments, and landowners are becoming aware of the flood risks associated with unmapped floodplains, including isolated depressions.*

If the adopting political body is a County, then in place of "more than one square mile" the following should be inserted:

"more than one (1) square mile in an urban or urbanizing area, or more than ten (10) square miles in a rural area".

502.2 In the case of an Appropriate Use, the P.E. shall state in writing that the development meets the requirements of Section 800.0.

#### 503.0 Dam Safety Requirements.

503.1 Ensure that an IDNR/OWR permit has been issued or a letter indicating no permit is required, if the proposed development activity includes construction of a dam as defined in Section 300.12.

503.2 Regulated dams may include weirs, restrictive culverts or impoundment structures.

#### 504.0 Other permit requirements.

Ensure that any and all required federal, state and local permits are received prior to the issuance of a floodplain development permit.

#### 505.0 Plan Review and Permit Issuance.

505.1 Ensure that all development activities within the SFHAs of the jurisdiction of the (City, Village) meet the requirements of this Ordinance, and;

505.2 Issue a floodplain development permit in accordance with the provisions of this Ordinance and other regulations of this community when the development meets the conditions of this Ordinance.

*Some construction activities in the floodway involve fill in "waters of the United States" (i.e., wetlands and streams) and are subject to U.S. Army Corps of Engineers regulations under Section 404 and to stream and wetland protection requirements of some local communities. Necessary permits, or signoffs, from the Corps and/or the local community should be received prior to, or jointly with, issuance of a floodplain development permit.*

#### 506.0 Inspection Review.

Inspect all development projects before, during and after construction to assure proper elevation of the structure and to ensure compliance with the provisions of this Ordinance;

#### 507.0 Elevation and Floodproofing Certificates.

Maintain permit files including:

507.1 An Elevation Certificate certifying the elevation of the lowest floor (including basement) of a residential or non-residential building subject to Section 1000.0 of this Ordinance, and/or;

507.2 The elevation to which a non-residential building has been floodproofed, using a Floodproofing Certificate, for all buildings subject to Section 1000.0 of this Ordinance

Required by NFIP: 44 CFR 60.3(b)(4).

Copies to be provided for property owners or renters seeking Flood Insurance.

#### 508.0 Records for Public Inspection.

Maintain for public inspection and furnish upon request base flood data, SFHA and designated floodway maps, copies of federal or state permit documents, variance documentation, Conditional Letter of Map Revision, Letter of Map Revision, Letter of Map Amendment and "as-built" elevation and floodproofing and/or elevation certificates for all buildings constructed subject to this Ordinance.



## **509.0 State Permits.**

Ensure that construction authorization has been granted by IDNR/OWR, for all development projects subject to Sections 800.0 and 900.0 of this Ordinance, unless enforcement responsibility has been delegated to the (City, Village). However, the following review approvals are not delegated to the (City, Village) and shall require review or permits from IDNR/OWR:

- 509.1 Organizations which are exempt from this Ordinance, as per the Illinois Compiled Statutes;
- 509.2 IDNR/OWR projects, dams or impoundment structures as defined in Section 300.12 and all other state, federal or local unit of government projects, including projects of the (City, Village) and County, except for those projects meeting the requirements of Section 802.7;
- 509.3 An engineer's determination that an existing bridge or culvert crossing is not a source of flood damage and the analysis indicating the proposed flood profile, per Section 802.3(e);
- 509.4 An engineer's analysis of the flood profile due to Section 802.3(d);
- 509.5 Alternative transition sections and hydraulically equivalent compensatory storage as indicated in Section 802.3(a, b, h);
- 509.6 Permit issuance of structures within, under, or over publicly navigable rivers, lakes and streams;
- 509.7 Any changes in the Base Flood Elevation or floodway locations; and,
- 509.8 Base Flood Elevation determinations where none now exist.

## **510.0 Cooperation with Other Agencies.**

- 510.1 Cooperate with state and federal floodplain management agencies to improve base flood or 100-year frequency flood and floodway data and to improve the administration of this Ordinance;
- 510.2 Submit data to IDNR/OWR and FEMA for proposed revisions of a regulatory map;
- 510.3 Submit reports as required for the National Flood Insurance Program; and
- 510.4 Notify FEMA of any proposed amendments to this Ordinance.

IDNR/OWR can delegate state permitting authority in the floodway for certain minor projects. State delegation means your community will be responsible for issuing development permits for several types of minor floodway development activities, without first obtaining a State permit. This delegation will free up state staff to work on the detailed projects that involve a change to the base flood elevation or floodway location.

## 511.0 Promulgate Regulations.

Promulgate rules and regulations as necessary to administer and enforce the provisions of this Ordinance, subject however to the review and approval of IDNR/OWR and FEMA for any Ordinance changes.

## Section 600.0 Base Flood Elevation

This Ordinance's protection standard is based on the Flood Insurance Study for the (City, Village).

600.1 If a base flood elevation or 100-year frequency flood elevation is not available for a particular site, then the protection standard shall be according to the best existing data available in the Illinois State Water Survey's Floodplain Information Repository that has been approved by IDNR/OWR and FEMA.

600.2 When a party disagrees with the best available data, he/she may finance the detailed engineering study needed to replace existing data with better data and submit it to IDNR/OWR and FEMA.

601.0 The base flood or 100-year frequency flood elevation for the SFHAs of \_\_\_\_ (river, creek, stream) shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of the (City, Village) prepared by FEMA (or the Department of Housing and Urban Development) and dated \_\_\_\_, and such amendments to such study and maps as may be prepared from time to time.

602.0 The base flood or 100-year frequency flood elevation for the SFHAs of those parts of unincorporated \_\_\_\_\_ County that are within the extraterritorial jurisdiction of the (City, Village) or that may be annexed into the (City, Village) shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of \_\_\_\_\_ County prepared by FEMA (or Department of Housing and Urban Development) and dated \_\_\_\_, and such amendments or revisions to such study and maps as may be prepared from time to time.

603.0 The base flood or 100-year frequency flood elevation for each SFHA delineated as an "AH Zone" or "AO Zone" shall be that elevation (or depth) delineated on the Flood Insurance Rate Map of the (City, Village).

604.0 The base flood or 100-year frequency flood elevation for each of the remaining SFHAs delineated as an "A Zone" on the Flood Insurance Rate Map of the (City, Village) shall be according to the best existing data available in the Illinois State Water Survey Floodplain Information Repository.

604.1 When no base flood or 100-year frequency flood elevation exists, the base flood or 100-year frequency flood elevation for a riverine SFHA shall be determined from a backwater model, such as HEC-II, WSP-2, or a dynamic model such as HIP.

This section explains which maps are to be used or which procedures are to be followed in determining whether a parcel of land is in the floodplain.

NFIP requirement: 44 CFR 60.3(b)(4)

Contact IDNR/OWR or FEMA for the date of your FIS.

Contact IDNR/OWR to determine which Sections (601, 602, 603 or 604) are required for your community. Many communities may only have to adopt portions of this Section, depending on their unique circumstances. For example, a land-locked community would not have to adopt 602; a community with no AH or AO zones would not have to adopt 603.

The 100-year frequency flood event is that event which has a 1 percent statistical chance of occurring in any given year.

*Flood flows should be based on anticipated future land use conditions in the watershed as determined from adopted local and regional land use plans. Anticipated future development will exacerbate existing flooding in many cases. In small to moderately sized watersheds, it has been shown that stringent stormwater detention requirements for new development can minimize or prevent increases in the flood peak. However, for larger watersheds (e.g., 100 square miles or larger), it is expected that future development will increase both flood peaks and durations, regardless of local*



604.2 The flood flows used in the hydraulic models shall be obtained from a hydrologic model, such as HEC-I, TR-20, or HIP, or by techniques presented in various publications prepared by the United States Geological Survey for estimating peak flood discharges.

604.3 Along any watercourses draining more than one (1) square mile, the above analyses shall be submitted to IDNR/OWR for approval. Once approved it must be submitted to the Illinois State Water Survey Floodplain Information Repository for filing.

604.4 For a non-riverine SFHA, the Base Flood Elevation shall be the historic Flood of Record plus *three feet*, unless calculated by a detailed engineering study and approved by IDNR/OWR for drainage areas greater than one square mile.

604.5 *For an unmapped extended SFHA (with a drainage area less than one square mile) which has been identified by the \_\_\_\_\_ pursuant to Section 501.3, the base flood elevation shall be determined by the applicant utilizing a method as approved in Section 604, with concurrence of the \_\_\_\_\_.*

## Section 700.0 Occupation and Use of Flood Fringe Areas

Development in and/or filling of the flood fringe will be permitted if protection is provided against the base flood or 100-year frequency flood by proper elevation, and compensatory storage, and other applicable provisions of this Ordinance. No use will be permitted which adversely affects the capacity of drainage facilities or systems. Developments located within the flood fringe shall meet the requirements of this Section, along with the requirements of Section 1000.0.

### 701.0 Development Permit.

701.1 No person, firm, corporation, or governmental body not exempted by state law shall commence any development in the SFHA without first obtaining a development permit from the \_\_\_\_\_.

*stormwater controls, due to increases in the total volume of runoff. In the situations where flood increases related to future development are expected, it is critical that flood flows and the resultant maps be based on anticipated future land use. In determining future flood flows, the influence of stormwater detention which is required and enforced by local government ordinances should be factored into the hydrologic model.*

If the adopting political body is a County, then in place of "more than one square mile" the following should be inserted:

"more than one (1) square mile in an urban or urbanizing... area, or more than ten (10) square miles in a rural area".

*NIPC recommends that, at a minimum, floodplain mapping be performed for any watercourse draining more than one square mile, even if the political body is a county. Current development patterns and trends in northeastern Illinois indicate that urban development can occur anywhere, even in predominantly rural areas. Without floodplain mapping for many of the watercourses in these areas, it will be difficult to prevent new development from locating in floodprone zones.*

*The +3 foot requirement is recommended language from IDNR/OWR.*

*As described in the commentary opposite Section 501.0, it is important that significant floodplains be identified and be subject to the requirements of this Ordinance, even if the tributary drainage area is less than one square mile.*

List the title of the official responsible for administering the floodplain ordinance.

This section explains the procedures which are to be followed in determining whether a parcel of land is in a flood fringe, and sets the minimum requirements for all developments within a flood fringe.

Developments in the flood fringe may include the construction of a dam as defined in Section 300.12. An IDNR/OWR permit for the dam or a letter indicating "no IDNR/OWR permit is required" is necessary for any such construction.

NFIP requirement: 44 CFR 60.3(b)(1). List the title of the official responsible for administering the floodplain ordinance.



701.2 Application for a development permit shall be made on a form provided by the \_\_\_\_\_.

(a) The application shall be accompanied by drawings of the site, drawn to scale, showing property line dimensions and legal description for the property and sealed by a licensed engineer, architect or land surveyor; existing grade elevations in M.S.L., 1929 adj. datum or N.G.V.D. and all changes in grade resulting from excavation or filling; the location and dimensions of all buildings and additions to buildings.

(b) For all proposed buildings, the elevation of the lowest floor (including basement) and lowest adjacent grade shall be shown on the submitted plans and the development will be subject to the requirements of Section 1000.0 of this Ordinance.

701.3 Upon receipt of a development permit application, the \_\_\_\_\_ shall compare the elevation of the site to the base flood or 100-year frequency flood elevation.

(a) Any development located on land that can be shown to be higher than the base flood elevation of the current Flood Insurance Rate Map and which has not been filled after the date of the site's first Flood Insurance Rate Map without a permit as required by this ordinance is not in the SFHA and, therefore, not subject to the requirements of this Ordinance.

(b) The \_\_\_\_\_ shall maintain documentation of the existing ground elevation at the development site and certification that this ground elevation existed prior to the date of the site's first Flood Insurance Rate Map identification.

**701.4 A soil erosion and sediment control plan for disturbed areas shall be submitted. This plan shall include a description of the sequence of grading activities and the temporary sediment and erosion control measures to be implemented to mitigate their effects. This plan shall also include a description of final stabilization and revegetation measures, and the identification of a responsible party to ensure post-construction maintenance.**

701.5 The \_\_\_\_\_ shall be responsible for obtaining from the applicant copies of all other federal, state, and local permits, approvals or permit-not-required letters that may be required for this type of activity. The \_\_\_\_\_ shall not issue a permit unless all other federal, state, and local permits have been obtained.

## **702.0 Preventing Increased Damages.**

No development in the flood fringe shall create a threat to public health and safety.

List the title of the official responsible for administering the floodplain ordinance.

List the title of the official responsible for administering the floodplain ordinance.

Such a project will still be subject to the flood insurance purchase requirements unless the owner receives a Letter of Map Amendment from FEMA.

List the title of the official responsible for administering the floodplain ordinance.

*Assistance in administration of soil erosion and sedimentation control requirements is provided in "Model Soil Erosion and Sediment Control Ordinance: A Guide for Local Officials" September, 1991.*

List the title of the official responsible for administering the floodplain ordinance.

NFIP requirement: 44 CFR 60.3(a)(2).

NFIP requirement: 44 CFR 60.3(a)(4)(i), 60.3(c)(10) and 60.3(d)(3).

702.1 If fill is being used to elevate the site above the base flood or 100-year frequency flood elevation, the applicant shall submit sufficient data and obtain a letter of map revision (LOMR) from FEMA for the purpose of removing the site from the floodplain.

702.2 Compensatory Storage.

- (a) Whenever any portion of a floodplain is authorized for use, the volume of space which will be occupied by the authorized fill or structure below the base flood or 100-year frequency flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood or 100-year frequency flood elevation.
- (b) The excavation volume shall be at least equal to *1.5 times* the volume of storage lost due to the fill or structure.
- (c) In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied.
- (d) All floodplain storage lost below the existing 10-year flood elevation shall be replaced below the proposed 10-year flood elevation. All floodplain storage lost above the existing 10-year flood elevation shall be replaced above the proposed 10-year flood elevation.
- (e) All such excavations shall be constructed to drain freely and openly to the watercourse.

*NIPC policy supports the requirement for a safety factor for compensatory storage equal to at least 1.5 times the volume of storage lost due to fill or structures. This safety factor is intended to compensate for uncertainties in the estimation of the base flood elevation and in the determination of project impacts.*

This section requires compensatory storage in the flood fringe and the floodway. Compensatory storage in the floodway is required by IDNR/OWR. *Compensatory storage in the flood fringe is recommended by both NIPC and IDNR/OWR but is not required.* If compensatory storage is not provided within the flood fringe, IDNR/OWR will require that all future mapping have storage floodways rather than the current conveyance floodways. Storage floodways are normally much wider than conveyance floodways and will result in the more stringent requirements of Section 800 being enforced in a larger area of the community.

If your community and other communities along a hydraulically significant portion of a stream desire to have the floodway defined on the basis of conveyance only and not storage, effective compensatory storage will be required for all construction in the floodplain for projects under the control of your community as well as any projects constructed that affects floodplain storage. If the municipality owns a regional flood control or stormwater storage facility, and has a plan for developing additional storage at the facility, the municipality may prefer to offer developers of isolated single lots, one quarter acre or smaller in size, the ability to provide hydraulically equivalent storage in the regional facility as an alternative to providing on-site compensatory storage. It would need to be shown through the use of hydrologic and hydraulic models, however, that the additional storage created in the regional facility is hydraulically equivalent to the storage lost at the development site.



## Section 800.0 Occupation and Use of Designated Floodways

This section applies to proposed development, redevelopment, site modification or building modification within a designated floodway. The designated floodway for \_\_\_\_\_ (river, creek, stream) shall be as delineated on the designated floodway maps designated by IDNR/OWR according to and referenced in Section 300.13. Only those uses and structures will be permitted which meet the criteria in this section. All floodway modifications shall be the minimum necessary to accomplish the purpose of the project. The development shall also meet the requirements of Section 1000.0.

### 801.0 Development Permit.

No person, firm, corporation or governmental body not exempted by state law shall commence any development in a floodway without first obtaining a development permit from the \_\_\_\_\_ and IDNR/OWR.

801.1 Application for a development permit shall be made on a form provided by the \_\_\_\_\_. The application shall include the following information:

- (a) Name and address of applicant;
- (b) Site location (including legal description) of the property, drawn to scale, on the designated floodway map, indicating whether it is proposed to be in an incorporated or unincorporated area;
- (c) Name of stream or body of water affected;
- (d) Description of proposed activity;
- (e) Statement of purpose of proposed activity;
- (f) Anticipated dates of initiation and completion of activity;
- (g) Name and mailing address of the owner of the subject property if different from the applicant;
- (h) Signature of the applicant or the applicant's agent;
- (i) If the applicant is a corporation, the president or other authorized officer shall sign the application form;
- (j) If the applicant is a partnership, each partner shall sign the application form; and
- (k) If the applicant is a land trust, the trust officer shall sign the name of the trustee by him (her) as trust officer. A disclosure affidavit shall be filed with the application, identifying each beneficiary of the trust by name and address and defining the respective interests therein.

This section explains the procedures which are to be followed to determine if a site is within a floodway and sets the minimum requirements for all development within a floodway.

IDNR/OWR requirements. Section 800.0, in its entirety, meets the requirements of 92 Ill. Adm. Code Part 708.

NFIP requirement: 44 CFR 60.3(b)(1).

List the title of the official responsible for administering the floodplain Ordinance.

If IDNR/OWR has delegated its permitting authority in the floodway to the community, then only those development activities in Section 802.4 would still require permits from IDNR/OWR.

List the title of the official responsible for administering the floodplain Ordinance.

- (l) Plans of the proposed activity shall be provided which include as a minimum:
- i. A vicinity map showing the site of the activity, name of the waterway, boundary lines, names of roads in the vicinity of the site, graphic or numerical scale, and north arrow;
  - ii. A plan view of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the structure or work, elevations in mean sea level (1929 adjustment) datum or N.G.V.D. or North American Vertical Datum, adjacent property lines and ownership, drainage and flood control easements, *location of any channels and any existing or future access roads, distance between proposed activity and navigation channel (when the proposed construction is near a commercially navigable body of water), designated floodway limit, floodplain limit, specifications and dimensions of any proposed channel modifications*, location and orientation of cross-sections, north arrow, and a graphic or numerical scale;
  - iii. Cross-section views of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the work as shown in plan view, existing and proposed elevations, normal water elevation, 10-year frequency flood elevation, 100-year frequency flood elevation, and graphic or numerical scales (horizontal and vertical);
  - iv. *A soil erosion and sediment control plan for disturbed areas. This plan shall include a description of the sequence of grading activities and the temporary sediment and erosion control measures to be implemented to mitigate their effects. This plan shall also include a description of final stabilization and revegetation measures, and the identification of a responsible party to ensure post-construction maintenance.*
  - v. A copy of the designated floodway map, marked to reflect any proposed change in the designated floodway location.
- (m) Any and all other federal, state, and local permits or approval letters that may be required for this type of development.
- (n) Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the permit criteria of Section 802.0.

*The Model Stream and Wetland Protection Ordinance prepared by the Northeastern Illinois Planning Commission requires the preparation and submittal of a series of plans which further document the conditions and provide for natural resources management. These include (1) a geologic and soil report, (2) a drainage control plan, (3) a site grading and excavation plan, and (4) a landscape plan. In some communities, the information included in these plans may be required through subdivision regulations or other existing ordinances. They were included in the Model Ordinance in order to insure a comprehensive approach to stream and wetland protection. Where communities have ordinance provisions which already require such information, it would not be necessary to require it through a stream and wetland protection ordinance. A stream and wetland protection ordinance, or a floodplain ordinance, may make reference to the other ordinances that deal with geology and soils, drainage, grading and excavation, and landscaping.*

*Assistance in administration of soil erosion and sedimentation control requirements is provided in "Model Soil Erosion and Sediment Control Ordinance: A Guide for Local Officials" September, 1991.*

Floodway fill or channel modification activities often will require a permit from the U.S. Army Corps of Engineers if they constitute fill in "waters of the U.S."



## 801.1

- (o) If the designated floodway delineation, base flood or 100-year frequency flood elevation will change due to the proposed project, the application will not be considered complete until IDNR/OWR has indicated conditional approval of the designated floodway map change. No structures may be built until a Letter of Map Revision has been approved by FEMA.
- (p) The application for a structure shall be accompanied by drawings of the site, drawn to scale showing property line dimensions and existing ground elevations and all changes in grade resulting from any proposed excavation or filling, and floodplain and floodway limits; sealed by a registered professional engineer, licensed architect or registered land surveyor; the location and dimensions of all buildings and additions to buildings; and the elevation of the lowest floor (including basement) of all proposed buildings subject to the requirements of Section 1000.0 of this Ordinance.
- (q) *If the proposed project involves a channel modification, the applicant shall submit the following information:*
  - i. *A discussion of the purpose of and need for the proposed work;*
  - ii. *A discussion of the feasibility of using alternative locations or methods (see 802.3(i)i.) to accomplish the purpose of the proposed work;*
  - iii. *An analysis of the extent and permanence of the impacts each feasible alternative identified in 802.3 (i)i. of this Section would have on the physical and biological conditions of the body of water affected; and*
  - iv. *An analysis of the impacts of the proposed project, considering cumulative effects on the physical and biological conditions of the body of water affected.*

*Channel modifications are of particular concern because of their potential impacts on erosion, water quality and habitat, as well as flood height and velocity. Therefore, specific additional information is required to assess their impacts. The depth and extent of required impact analyses should be generally related to the severity of the proposed modification, the quality of the existing resource, and the length of channel affected. Certain activities involving fill in existing channels are also regulated by the U.S. Army Corps of Engineers, which requires its own assessment of environmental impacts. Review of such activities should be coordinated with the Corps.*

801.2 The \_\_\_\_\_ shall be responsible for obtaining from the applicant copies of all other federal, state, and local permits and approvals that may be required for this type of activity.

List the title of the official responsible for administering the floodplain ordinance.

NFIP requirement: 44 CFR 60.3(a)(2).

- (a) The \_\_\_\_\_ shall not issue the development permit unless all required federal and state permits have been obtained.
- (b) A Registered Professional Engineer, under the employ or contract of the (City, Village) shall review and approve applications reviewed under this Section.

NFIP requirement: 44 CFR 60.3(a)(4)(i), 60.3(c)(10) and 60.3(d)(3).



## 802.0 Preventing Increased Damages and a List of Appropriate Uses.

802.1 The only development in a floodway which will be allowed are Appropriate Uses, which will not cause a rise in the base flood elevation, and which will not create a damaging or potentially damaging increase in flood heights or velocity or be a threat to public health and safety and *welfare or impair the natural hydrologic and hydraulic functions of the floodway or channel, or permanently impair existing water quality or aquatic habitat. Construction impacts shall be minimized by appropriate mitigation methods as called for in this Ordinance.* Only those Appropriate Uses listed in 92 Ill. Adm. Code Part 708 will be allowed. The approved Appropriate Uses are as follows:

- (a) Flood control structures, dikes, dams and other public works or private improvements relating to the control of drainage, flooding, erosion, or water quality or habitat for fish and wildlife.
- (b) Structures or facilities relating to the use of, or requiring access to, the water or shoreline, such as pumping and treatment facilities, and facilities and improvements related to recreational boating, commercial shipping and other functionally water dependent uses;
- (c) Storm and sanitary sewer relief outfalls;
- (d) Underground and overhead utilities;
- (e) Recreational facilities such as playing fields and trail systems, including any related fencing (at least 50 percent open when viewed from any one direction) built parallel to the direction of flood flows, and including open air pavilions and toilet facilities (4 stall maximum) that will not block flood flows nor reduce floodway storage

*NIPC policy supports development in the floodway for only the following appropriate uses: public flood control projects, public recreation and open space uses, water dependent activities, and crossing roads and bridges. Recommended NIPC appropriate uses are listed in Alternative Section 802.1*

*Regrading or other modifications of the floodway for convenience of site design for private developments are not considered by NIPC to be appropriate uses of the floodway. Private flood control structures are considered appropriate uses if they are supported by the local government entity and if they reduce flood damages to existing structures both on and off site (i.e., if there are "regional" benefits).*

*NIPC policy does not consider the location of new treatment facilities and unnecessary pumping facilities in the floodway as appropriate unless such facility requires access to the water or shoreline. While wastewater treatment plants have traditionally been located along watercourses, often in the floodway, experience has indicated that such locations may be inappropriate. Facilities have been severely damaged by recent floods and disrupted plant operations have resulted in degraded water quality which, in turn, has resulted in increased flood damages. Floodproofing has been only partially successful in protecting facilities from severe floods.' Other water dependent, treatment-related facilities, such as instream aeration, siphons, debris booms, etc., are considered appropriate uses as long as they are designed and operated so as to minimize negative impacts on the natural functions of the floodway and stream channels.*

IDNR/OWR has determined that a small toilet facility for a park building would be appropriate because the use of floodways as parks or other open spaces should be encouraged.

*NIPC policy discourages the inclusion of small toilet facilities as an appropriate use of the floodway. Such facilities could impede flood flows and/or contribute to water quality contamination. If such facilities are necessary, they should be located outside the floodplain, or at least in the flood fringe.*



- (f) Detached garages, storage sheds, or other non-habitable accessory structures that will not block flood flows nor reduce floodway storage;
- (g) Bridges, culverts, roadways, sidewalks, railways, runways and taxiways and any modification thereto;
- (h) Parking lots built at or below existing grade where either:
  - i. The depth of flooding at the 100-year frequency flood event will not exceed 1.0 foot; or
  - ii. The applicant of a short-term recreational use facility parking lot, formally agrees to restrict access during overbank flooding events and accepts liability for all damage caused by vehicular access during all overbank flooding events.
- (i) Designated floodway regrading, without fill, to create a positive non-erosive slope toward a watercourse.
- (j) Floodproofing activities to protect previously existing lawful structures including the construction of water tight window wells, elevating structures, or construction of floodwalls around residential, commercial or industrial principal structures where the outside toe of the floodwall shall be no more than ten (10) feet away from the exterior wall of the existing structure, and, which are not considered substantial improvements to the structure.

*NIPC policy does not consider detached garages, storage sheds, or other accessory structures appropriate in the floodway. Although small, non-habitable structures may not be a large source of flood damages, they can impede flood flows and may impose a debris hazard in areas of high flow velocity.*

Garages, storage sheds and other non-habitable accessory structures may be allowed if they are in the hydraulic shadow of an existing building and are designed to be wet floodproofed, or if the floodway has been excavated for conveyance and storage.

*NIPC policy does not consider the placement of unnecessary impervious surfaces in the floodway as appropriate. Roadways, railways, and sidewalks necessary for conveyance over a channel, and associated bridges and culverts are considered appropriate uses. Uses such as roadways parallel to a watercourse, taxiways and parking lots are not considered necessary or appropriate in the floodway. Impervious surfaces in the floodway may increase conveyance as well as reduce the absorption and recharge of storm and flood water. Such uses may increase the potential for vehicular flood damages and traffic disruptions.*

*NIPC further discourages short-term recreational use facility parking lots, particularly since this provision does not restrict the depth of flooding. In addition to the concerns previously stated regarding increased flood damage liability and impairment of natural functions, there is the concern that it will sometimes be impossible to accurately predict when flooding will occur and, correspondingly, it may be difficult to ensure that vehicles will be removed in a timely fashion.*

*NIPC policy does not consider the unnecessary regrading of a floodway to improve drainage as appropriate. Undrained, depressional areas in a floodway function to retain floodwaters after a flood has passed, discharging it slowly to the channel or recharging groundwater. Floodway regrading to improve drainage when necessary to achieve a valid public purpose, can be considered an appropriate use.*



- (k) The replacement, reconstruction, or repair of a damaged building, provided that the outside dimensions are not increased, and if the building was damaged to 50 percent or more of the market value before the damage occurred, the building will be protected from flooding to the flood protection elevation.
- (l) Modifications to an existing building that would not increase the enclosed floor area of the building below the 100-year frequency flood elevation, and which will not block flood flows including but not limited to, fireplaces, bay windows, decks, patios, and second story additions. If the building improved to 50 percent or more of the market value before the modification occurred, the building will be protected from flooding to the flood protection elevation.

#### 802.1 Alternative

- (a) *Public flood control structures, dikes, dams and other public works or private improvements relating to the control of drainage, flooding of existing structures, erosion, or water quality or habitat for fish and wildlife.*
- (b) *Structures or facilities relating to the use of, or requiring access to, the water or shoreline, such as instream aeration and similar treatment facilities, facilities and improvements related to recreational boating, and commercial shipping and other functionally water dependent uses;*
- (c) *Storm and sanitary sewer outfalls;*
- (d) *Underground and overhead utilities;*
- (e) *Public open space and recreational facilities such as playing fields and trail systems including any related fencing (at least 50 percent open when viewed from any one direction) built parallel to the direction of flood flows, and including open air pavilions;*
- (f) *Bridges, culverts, and associated roadways, sidewalks, and railways, necessary for crossing over the floodway or for providing access to other appropriate uses in the floodway and any modification thereto;*

*NIPC policy discourages the replacement, repair, or reconstruction of a substantially damaged (damages exceeding 50 percent of the market value) building in the floodway. Prohibiting repairs, etc. on substantially damaged buildings will result in long-term reductions in damage liability, reduced needs for emergency response, and increased incentives for buyouts of high-risk properties. To minimize financial hardships to existing property owners, it is recommended that federal, state, and/or local measures be implemented to compensate property owners for the dollar difference between the amount they are compensated for their property (i.e., insurance and/or buyouts) and its fair market value.*

*This "Alternative" section lists NIPC recommended appropriate uses which are more restrictive than the appropriate uses allowed by State rules. In particular, uses such as pumping and treatment facilities, garages and sheds, roadways running longitudinally along a watercourse, and parking lots are not considered appropriate because of concerns that they will increase flood damages, interfere with natural functions of floodways, and/or impair water quality and habitat.*

*State law allows local regulations that are more restrictive than state requirements if they are reasonable. Local governments choosing to adopt the NIPC definition of appropriate uses are encouraged to back up their regulations with a planning process which supports and endorses the broad purposes of this Ordinance, and to document any problems which it has experienced with non-appropriate floodway development activities.*

If the NIPC Alternative Section 802.1 is adopted, Section 802.1 should not be included.

## 802.1 Alternative

- (g) *Flood proofing activities to protect previously existing lawful structures including the construction of water tight window wells, elevating structures, or construction of floodwalls around residential, commercial or industrial principal structures where the outside toe of the floodwall shall be no more than ten (10) feet away from the exterior wall of the existing structure, and, which are not considered substantial improvements to the structure.*
- (h) *In the case of damaged or replacement buildings, reconstruction or repairs made to a building that are valued at less than 50 percent of the market value of the building before it was damaged or replaced, and which does not increase the outside dimensions of the building.*

802.2 Appropriate uses do not include the construction or placement of any new structures, fill, building additions, buildings on stilts, *excavation or channel modifications done to accommodate otherwise non-appropriate uses in the floodway*, fencing (including landscaping or planting designed to act as a fence) and storage of materials except as specifically defined above as an Appropriate Use.

802.3 Within the designated floodway as identified on the floodway maps designated by IDNR/OWR, the construction of an Appropriate Use, will be considered permissible provided that the proposed project meets the following engineering and mitigation criteria and is so stated in writing with supporting plans, calculations and data by a registered professional engineer and provided that any structure meets the protection requirements of Section 1000.0 of this Ordinance:

- (a) Preservation of Flood Conveyance, so as Not to Increase Flood Stages Upstream. For appropriate uses other than bridge or culvert crossings, on-stream structures or dams, all effective designated floodway conveyance lost due to the project will be replaced for all flood events up to and including the 100-year frequency flood. In calculating effective designated floodway conveyance, the following factors shall be taken into consideration:

- i. Designated floodway conveyance,  
"K" =  $(1.486/n)(AR^{2/3})$  where "n" is Manning's roughness factor, "A" is the effective flow area of the cross-section, and "R" is the ratio of the area to the wetted perimeter. (See Open Channel Hydraulics, Ven Te Chow, 1959, McGraw-Hill Book Company, New York)

*Any increase in stage associated with construction in the floodway is contrary to NIPC policy, unless the increase in stage is associated with a necessary public flood control project and there is no increase in off-site flood damages.*

For communities without sophisticated word processing software, the formula can also be written as:

$$"K" = (1.486/n) * (A * (R^{0.667}))$$



### 802.3(a)

- ii. The same Manning's "n" value shall be used for both existing and proposed conditions unless a recorded maintenance agreement with a federal, state, or local unit of government can assure the proposed conditions will be maintained or the land cover is changing from a vegetative to a non-vegetative land cover.
- iii. Transition sections shall be provided and used in calculations of effective designated floodway conveyance. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to IDNR/OWR through engineering calculations or model tests that more abrupt transitions may be used with the same efficiency:
  - (1) When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length.
  - (2) When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one foot of the flooded stream's length.
  - (3) When expanding or contracting flows in a vertical direction, a minimum of one foot vertical transition for every ten feet of stream length shall be used.
  - (4) Transition sections shall be provided between cross-sections with rapid expansions and contractions and when meeting the designated floodway delineation on adjacent properties.
  - (5) All cross-sections used in the calculations shall be located perpendicular to flood flows.
- (b) Preservation of Floodway Storage so as Not to Increase Downstream Flooding.
  - i. Compensatory storage shall be provided for any designated floodway storage lost due to the proposed work from the volume of fill or structures placed and the impact of any related flood control projects.
  - ii. Compensatory storage for fill or structures shall be equal to at least *1.5 times* the volume of floodplain storage lost.

*For certain proposed activities, the floodway roughness may be increased by the activity. An example is a habitat restoration project. In these instances, the same Manning's "n" value should not be used for existing and proposed conditions. In general, floodway roughness should not be reduced by a proposed activity, unless the activity is a public flood control project designed to increase conveyance. Substantial reductions in roughness associated with, for example, changing from a vegetative to a non-vegetative land cover, are not supported by NIPC policy. Proposed activities which rely on continued future maintenance (e.g., mowing) to maintain a low roughness coefficient also are discouraged.*

*Floodway modification, particularly channel modification, should provide smooth transitions for flowing water to avoid unstable conditions or substantial head losses. It is recommended that neither contractions or expansions occur at a rate greater than one foot horizontal for every four feet of the flooded stream's length. Chow in "Open-Channel Hydraulics" states that the optimum maximum angle between the channel axis and a line connecting the channel sides is 12.5 degrees, which is approximately equal to 1 to 4.*

*Compensatory Storage: NIPC policy supports the requirement for a safety factor for compensatory storage equal to at least 1.5 times the volume of storage lost due to fill or structures. This safety factor is intended to compensate for uncertainties in the estimate of the base flood elevation and in the determination of project impacts. NIPC policy also recommends that there be no reduction in existing floodway surface area. Any loss of upstream floodplain storage due to downstream conveyance improvements should be compensated with at least an equal volume of compensatory storage on the*



## 802.3(b)

- iii. Artificially created storage lost due to a reduction in head loss behind a bridge shall not be required to be replaced.
  - iv. The compensatory designated floodway storage shall be placed between the proposed normal water elevation and the proposed 100-year flood elevation. All designated floodway storage lost below the existing 10-year flood elevation shall be replaced below the proposed 10-year flood elevation. All designated floodway storage lost above the existing 10-year flood elevation shall be replaced above the proposed 10-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse.
  - v. If the compensatory storage will not be placed at the location of the proposed construction, the applicant's engineer shall demonstrate to IDNR/OWR through a determination of flood discharges and water surface elevations that the compensatory storage is hydraulically equivalent.
  - vi. *There shall be no reduction in floodway surface area as a result of a floodway modification, unless such modification is necessary to reduce flooding at existing structure.*
- (c) Preservation of Floodway Velocities so as Not to Increase Stream Erosion or Flood Heights.
- i. For all Appropriate Uses, except bridges or culverts or on stream structures, the proposed work will not result in an increase in the average channel or designated floodway velocities *or stage for all flood events up to and including the 100-year frequency event.*
  - ii. In the case of bridges or culverts or on stream structures built for the purpose of backing up water in the stream during normal or flood flows, velocities may be increased at the structure site if scour, erosion and sedimentation will be avoided by the use of rip-rap or other design measures.
- (d) Construction of New Bridges or Culvert Crossings and Roadway Approaches.
- i. The proposed structure shall not result in an increase of upstream flood stages greater than 0.1 foot when compared to the existing conditions for all flood events up to and including the 100-year frequency event; or the upstream flood stage increases will be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection

*downstream site. As indicated in the commentary to 802.3(c), if reduced head loss is expected to increase downstream stages, downstream property owners should be notified of any changes to the Base Flood Elevation.*

Artificially created storage is defined as that amount of water held or stored behind a bridge or culvert due to an opening which is too small to allow the passage of water without obstruction, during a base flood event.

*Any increase in stage associated with construction in the floodway is contrary to NIPC policy, unless the increase in stage is associated with a necessary public flood control project and there is no increase in off-site flood damages.*

*Any increase in stage associated with construction in the floodway is contrary to NIPC policy, unless the increase in stage is associated with a necessary public flood control project and there is no increase in off-site flood damages.*

802.3(d)(i)

grade of existing levees or flood walls or within recorded flood easements.

- ii. If the proposed construction will increase upstream flood stages greater than 0.1 feet, the developer must contact IDNR/OWR to obtain a permit for a dam or waiver.

- (1) The engineering analysis of upstream flood stages must be calculated using the flood study flows, and corresponding flood elevations for tailwater conditions for the flood study specified in Section 600.0 of this Ordinance. Culverts must be analyzed using the U.S. DOT, FHWA Hydraulic Chart for the Selection of Highway Culverts. Bridges must be analyzed using the U.S. DOT/Federal Highway Administration Hydraulics of Bridge Waterways calculation procedures.

- (2) Lost floodway storage must be compensated for per Section 802.3(b).

- (3) Velocity increases must be mitigated per Section 802.3(c).

- (4) If the crossing is proposed over a public water that is used for recreational or commercial navigation, an IDNR/OWR permit must be received.

- (5) The hydraulic analysis for the backwater caused by the bridge showing the existing condition and proposed regulatory profile must be submitted to IDNR/OWR for concurrence that a CLOMR is not required by Section 802.0.

- (6) All excavations for the construction of the crossing shall be designed per Section 802.3(h).

(e) Reconstruction or Modification of Existing Bridges, Culverts, and Approach Roads.

- i. The bridge or culvert and roadway approach reconstruction or modification shall be constructed with no more than 0.1 foot increase in backwater over the existing flood profile for all flood frequencies up to and including the 100-year event, if the existing structure is not a source of flood damage.

- ii. If the existing bridge or culvert and roadway approach is a source of flood damage to buildings or structures in the upstream floodplain, the applicant's engineer shall evaluate the feasibility of redesigning the structure to reduce the existing

*If a bridge or culvert is modified to reduce existing backwater, it is likely that downstream flood stages will increase. While this section does not require mitigation for such an increase, downstream property owners should be notified of changes to the Base Flood Elevation, which might affect their flood prone status and their consideration of purchasing flood insurance.*



backwater, taking into consideration the effects on flood stages on upstream and downstream properties.

- iii. The determination as to whether or not the existing crossing is a source of flood damage and should be redesigned must be prepared in accordance with 92 Ill. Adm. Code Part 708 (Floodway Construction in Northeastern Illinois) and submitted to IDNR/OWR for review and concurrence before a permit is issued.
- (f) On-Stream Structures Built for the Purpose of Backing Up Water.
- i. Any increase in upstream flood stages greater than 0.0 foot when compared to the existing conditions, for all flood events up to and including the 100-year frequency event shall be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within recorded flood easements.
  - ii. A permit or letter indicating a permit is not required must be obtained from IDNR/OWR for any structure built for the purpose of backing up water in the stream during normal or flood flow.
  - iii. All dams and impoundment structures as defined in Section 300.12 shall meet the permitting requirements of 92 Ill. Adm. Code Part 702 (Construction and Maintenance of Dams). *If the proposed activity involves a modification of the channel or floodway to accommodate an impoundment, it shall be demonstrated that:*
    - (1) *The impoundment is determined to be in the public interest by providing flood control, public recreation, or regional stormwater detention;*
    - (2) *The impoundment will not prevent the migration of indigenous fish species, which require access to upstream areas as part of their life cycle, such as for spawning;*
    - (3) *The impoundment will not cause or contribute to degraded water quality or habitat conditions. Impoundment design should include gradual bank slopes, appropriate bank stabilization measures, and a pre-sedimentation basin.*
    - (4) *A nonpoint source control plan has been implemented in the upstream watershed to control the effects of sediment runoff as well as minimize the input of nutrients, oil and*

*Impoundment of streams is often undesirable, for several reasons. Impoundments create quiescent conditions which may be conducive to depressed dissolved oxygen levels, the accumulation of polluted sediments and nutrient regeneration, and the proliferation of excessive plant and algae growth. Dams on streams may prevent the upstream migration of fish. In general, these concerns are most significant when permanent pools are constructed on larger streams (i.e. with watersheds larger than one or two square miles), or where nutrient-rich discharges, such as point sources are present. Use of on-stream impoundments for stormwater retention, without upstream nonpoint source pollutant controls, utilizes the stream for pollutant removal but may impair potential recreational and aquatic habitat uses of the impoundment. Impoundments without permanent low-flow pools are preferred except where a permanent pool is necessary to achieve the intended benefits of the impoundment (e.g. recreation or water quality mitigation). Design of such permanent pools should include criteria which will minimize the deleterious effects discussed above.*



*grease, metals, and other pollutants. If there is more than one municipality in the upstream watershed, the municipality in which the impoundment is constructed should coordinate with upstream municipalities to ensure comprehensive watershed control;*

**(5) The project otherwise complies with the requirements of Section 800.0.**

**(g) Flood Proofing of Existing Habitable, Residential and Commercial Structures.**

- i. If construction is required beyond the outside dimensions of the existing building, the outside perimeter of the floodproofing construction shall be placed no further than 10 feet from the outside of the building.
- ii. Compensation of lost storage and conveyance will not be required for floodproofing activities.

**(h) Excavation in the Floodway.**

- i. When excavation is proposed in the design of bridges and culvert openings, including the modifications to and replacement of existing bridge and culvert structures, or to compensate for lost conveyance or other Appropriate Uses, transition sections shall be provided for the excavation.
- ii. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to IDNR/OWR through engineering calculations or model tests that more abrupt transitions may be used with the same efficiency:
  - (1) When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length;
  - (2) When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one foot of the flooded stream's length; and
  - (3) When expanding or contracting flows in a vertical direction, a minimum of one foot vertical transition for every ten feet of stream length shall be used.

- (4) Erosion/scour protection shall be provided inland upstream and downstream of the transition sections.
- (i) *If the proposed activity involves a channel modification, it shall be demonstrated that:*
- i. *There are no practicable alternatives to the activity which would accomplish its purpose with less impact to the natural conditions of the body of water affected. Possible alternatives include levees, bank stabilization, flood proofing of existing structures, removal of structures from the floodplain, clearing the channel, high flow channel, or the establishment of a stream side buffer strip or green belt. Channel modification is acceptable if the purpose is to restore natural conditions and improve water quality and fish and wildlife habitat;*
  - ii. *Water quality, habitat, and other natural functions would be significantly improved by the modification and no significant habitat area may be destroyed, or the impacts are offset by the replacement of an equivalent degree of natural resource values;*
  - iii. *The activity has been planned and designed and will be constructed in a way which will minimize its adverse impacts on the natural conditions of the body of water affected, consistent with the following criteria:*
    - (1) *The physical characteristics of the modified channel shall match as closely as possible those of the existing channel in length, cross-section, slope and sinuosity. If the existing channel has been previously modified, restoration of more natural physical conditions should be incorporated into channel modification design, where practical.*
    - (2) *Hydraulically effective transitions shall be provided at both the upstream and downstream ends of the project, designed such that they will prevent erosion.*
    - (3) *One-sided construction of a channel shall be used when feasible. Removal of streamside (riparian) vegetation should be limited to one side of the channel, where possible, to preserve the shading and stabilization effects of the vegetation.*

*Channel modifications are particularly sensitive activities because of their potential direct impacts on channel stability, conveyance, water quality, habitat, and aesthetics. In general, watercourse modifications should be avoided unless necessary to achieve the purposes of an appropriate use, such as habitat restoration or a public flood control project. Channel modifications should not be permitted if the purpose is to accommodate private development activities in the floodplain. Rigorous enforcement of mitigation requirements for necessary modifications can eliminate some of the temporary and most of the permanent impacts of modification. Some suggested references which discuss mitigation measures are: "Manual of Conservation Engineering Guidelines," Illinois Department of Conservation, 1983; "Mitigating the Impacts of Stream Alterations," U.S. Army Corps of Engineers, Nashville (undated); and "Best Management Practices for Hydrologic Modification Projects," Illinois Environmental Protection Agency (undated). Additional assistance is available from the Office of Resource Conservation, IDNR (Phone: (217) 785-8287).*



- (4) *Clearing of stabilizing vegetation shall be limited to that which is essential for construction of the channel.*
- (5) *Channel banks shall be constructed with a side slope no steeper than 3:1 horizontal to vertical, wherever practicable. Native vegetation and gradual side slopes are the preferred methods for bank stabilization. Where high velocities or sharp bends necessitate the use of alternative stabilization measures, soil bioengineering techniques, natural rock or rip-rap are preferred approaches. Artificial materials such as concrete, gabions, or construction rubble should be avoided unless there are no practicable alternatives.*
- (6) *All disturbed areas associated with the modification shall be seeded or otherwise stabilized as soon as possible upon completion of construction. Erosion blanket or an equivalent material shall be required to stabilize disturbed channel banks prior to establishment of the vegetative cover.*
- (7) *If the existing channel contains considerable bottom diversity such as deep pools, riffles, and other similar features, such features shall be provided in the new channel. Spawning and nesting areas and flow characteristics compatible with fish habitat shall also be established, where appropriate.*
- (8) *A sediment basin shall be installed at the downstream end of the modification to reduce sedimentation and degradation of downstream water quality.*
- (9) *New or relocated channels should be built in the dry and all items of construction, including vegetation, should be completed prior to diversion of water into the new channel.*
- (10) *There shall be no increases in stage or velocity as the channel enters or leaves the project site for any frequency flood unless necessitated by a public flood control project or unless such an increase is justified as part of a habitat improvement or erosion control project.*
- (11) *Unless the modification is for a public flood control project, there shall be no reduction in the volume of floodwater storage outside the floodway as a result of the modification; and*

*For public flood control projects or water dependent activities, steeper side slopes may be unavoidable, due to limited land availability or conveyance factors. Where practicable, steep side slopes and artificial stabilization materials should be avoided.*

*Soil bioengineering techniques combine engineering principles and, in some cases, manufactured materials, with the use of native vegetation to accomplish effective, environmentally sensitive control of bank erosion. A number of bioengineering techniques, including lunken structures, A-jacks, coconut fiber rolls, and brush layering, have been successfully installed in northeastern Illinois channels in recent years. Advice on appropriate native vegetation can be found in the "Streambank Stabilization Program" report produced by the DuPage County Department of Environmental Concerns (DCDEC, 1995).*



iv. *The project otherwise complies with the requirements of Section 800.0*

(j) *Seeding and Stabilization Plan.*

For all activities located in a floodway, a seeding and stabilization plan shall be submitted by the applicant.

(k) *Soil Erosion and Sedimentation Measures.*

*For all activities in the floodway, including grading, filling, and excavation, in which there is potential for erosion of exposed soil, soil erosion and sedimentation control measures shall be employed consistent with the following criteria:*

- i. *The construction area shall be minimized to preserve the maximum vegetation possible. Construction shall be scheduled to minimize the time soil is exposed and unprotected. In no case shall the existing natural vegetation be destroyed, removed, or disturbed more than 15 days prior to the initiation of improvements.*
- ii. *Temporary and/or permanent soil stabilization shall be applied to denuded areas as soon as possible. As a minimum, soil stabilization shall be provided within 15 days after final grade is reached on any portion of the site, and within 15 days to denuded areas which may not be at final grade but will remain undisturbed for longer than 60 days.*
- iii. *Sedimentation control measures shall be installed before any significant grading or filling is initiated on the site to prevent the movement of eroded sediments off site or into the channel. Potential sediment control devices include filter fences, straw bale fences, check dams, diversion ditches, and sediment traps and basins.*
- iv. *A vegetated buffer strip of at least 25 feet in width shall be preserved and/or re-established, where possible, along existing channels (See 802.3 (p)). Construction vehicle use of channels shall be minimized. Temporary stream crossings shall be constructed, where necessary, to minimize erosion. Necessary construction in or along channels shall be restabilized immediately.*
- v. *Soil erosion and sedimentation control measures shall be designed and implemented consistent with "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois" (1988) also known as the "Green Book" and "The Illinois Urban Manual" (NRCS, 1995).*

- (l) *Public Flood Control Projects. For public flood control projects, the permitting requirements of this section*

*Soil erosion and sedimentation control are critical mitigation requirements for floodway construction activities because of the proximity of these activities to channels and their potential for inundation. Lack of proper controls can lead to sediment runoff into channels and unstable soil conditions. These, in turn, can result in loss of downstream flood storage, impaired water quality and habitat, and increased demands on taxpayers to mitigate problems such as channel erosion. In addition to the indicated references, it is suggested that the following NPIC document be consulted: "Model Soil Erosion and Sediment Control Ordinance: A Guide for Local Officials" September, 1991.*

*The "Green Book" is available through County Soil and Water Conservation District offices.*

*NPIC recommends that public flood control projects also meet the criteria of no offsite increase in*



will be considered met if the applicant can demonstrate to IDNR/OWR through hydraulic and hydrologic calculations that the proposed project will not singularly or cumulatively result in increased flood heights outside the project right-of-way or easements for all flood events up to and including the 100-year frequency event.

(m) General Criteria for Analysis of Flood Elevations.

- i. The flood profiles, flows and floodway data in the designated floodway study, referenced in Section 600.0, must be used for analysis of the base conditions. If the study data appears to be in error or conditions have changed, IDNR/OWR shall be contacted for approval and concurrence on the appropriate base conditions data to use.
- ii. If the 100-year designated floodway elevation at the site of the proposed construction is affected by backwater from a downstream receiving stream with a larger drainage area, the proposed construction shall be shown to meet:
  - (1) The requirements of this section for the 100-year frequency flood elevations of the designated floodway conditions; and,
  - (2) Conditions with the receiving stream at normal water elevations.
- iii. If the applicant learns from IDNR/OWR, local governments, or a private owner that a downstream restrictive bridge or culvert is scheduled to be removed, reconstructed, modified, or a regional flood control project is scheduled to be built, removed, constructed or modified within the next five years, the proposed construction shall be analyzed and shown to meet the requirements of this section for both the existing conditions and the expected flood profile conditions when the bridge, culvert or flood control project is built.

(n) Conditional Letter of Map Revision.

- i. If the Appropriate Use would result in a change in the designated floodway location or the 100-year frequency flood elevation, the applicant shall submit to IDNR/OWR and FEMA all information, calculations and documents necessary to be issued a conditional designated floodway map revision and receive from IDNR/OWR a conditional \_\_\_\_\_ concurrence of the designated floodway change before a permit is issued.
- ii. The final designated floodway map will not be changed by FEMA until as-built plans or record drawings of initial filling, grading, dredging, or

*velocities, unless such an increase is necessary to accomplish the purpose of the project. Any permitted increase in velocity shall not result in negative impacts offsite, such as erosive conditions. In addition, public flood control projects should be subject to the mitigation requirements of this section, including those dealing with sediment and erosion control, channel modifications and instream structures. In general, NIPC policy recommends the use of nonstructural methods for flood control wherever feasible. Modifications of the floodway for flood control should be the minimum necessary to accomplish the purpose of the project.*

excavating activities are submitted and accepted by FEMA and IDNR/OWR.

- iii. In the case of non-government projects, the municipality in incorporated areas and the county in unincorporated areas shall concur with the proposed conditional designated floodway map revision before IDNR/OWR approval can be given.
  - iv. No filling, grading, dredging or excavating shall take place until a conditional approval is issued.
  - v. After initial filling, grading, dredging or excavating, no activities shall take place until a final Letter of Map Revision (LOMR) is issued by FEMA with concurrence from IDNR/OWR.
- (o) Professional Engineer's Supervision.

All engineering analyses shall be performed by or under the supervision of a registered professional engineer.

- (p) *For all activities in the floodway involving construction within 25 feet of the channel, the following criteria shall be met:*

- i. *A natural vegetation buffer strip shall be preserved within at least 25 feet of the ordinary high water mark of the channel.*
- ii. *Where it is impossible to protect this buffer strip during the construction of an Appropriate Use, a vegetated buffer strip shall be established upon completion of construction.*

- (q) After receipt of conditional approval of the designated floodway change and issuance of a permit and a Conditional Letter of Map Revision, construction as necessary to change the floodway designation may proceed but no buildings or structures or other construction that is not an Appropriate Use may be placed in that area until the designated floodway map is changed and a final Letter of Map Revision is received. The designated floodway map will be revised upon acceptance and concurrence by IDNR/OWR and FEMA of the "as-built" plans.

*The purpose of a vegetated buffer strip is to minimize erosion, stabilize the streambank, protect water quality, maintain water temperature at natural levels, preserve fish and wildlife habitat, to screen man-made structures, and also to preserve aesthetic values of the channel. While native riparian vegetation is preferred in the buffer strip, alternative vegetation is acceptable if it is consistent with these purposes. Urban areas present constraints which require consideration of local conditions including stream width, the potential need for public access, etc. Twenty-five feet is generally considered a minimum width for a buffer strip. On larger streams or in more natural settings, a wider buffer strip is recommended. The U.S. Department of Agriculture (USDA), through its Conservation Reserve Program, encourages farmers to create "water quality enhancement zones" along streams, wetlands and lakes. The USDA recommend that these "filter strips" extend 66 to 99 feet from stream banks. The Dane County (WI) Regional Planning Commission has made buffer strip recommendations based upon stream size and need for public access. Their recommended buffer widths range from 25 to 75 feet. Similarly, a number of northeastern Illinois communities and counties now require buffers ranging from 30 to 50 feet.*

*Modifications of the floodway are supported by NIPC policy only if the modification is for an appropriate use. A change in the regulatory floodway location or the 100-year flood frequency elevation for any other use is not supported.*

*All construction activity in the floodway should be required to meet the construction and mitigation criteria outlined in this modification for other than*



802.4 Development Activities In Delegated Communities Requiring State Review.

For those projects listed below located in a designated floodway, the following criteria shall be submitted to IDNR/OWR for their review and concurrence prior to the issuance of a permit by a community or county delegated state permitting authority in the floodway.

- (a) An engineer's analysis of the flood profile due to a proposed bridge pursuant to Section 802.3(d).
- (b) An engineer's determination that an existing bridge or culvert crossing is not a source of flood damage and the analysis indicating the proposed flood profile, pursuant to Section 802.3(e).
- (c) Alternative transition sections and hydraulically equivalent storage pursuant to Section 802.3 (a, b, h).
- (d) The construction of any IDNR/OWR projects, dams (as defined in Section 300.12) and all other state, federal, or local units of government projects, including projects of the municipality or county.
- (e) An engineer's determination that a proposed bridge affected by backwater from a downstream receiving stream may be built with a smaller opening.
- (f) Projects which revise the floodway and/or flood profiles.
- (g) Projects in public bodies of water.

802.5 Other Permits.

- (a) In addition to the other requirements of this Ordinance, a development permit for a site located in a floodway shall not be issued unless the applicant first obtains a permit or written documentation that a permit is not required from IDNR/OWR, issued pursuant to 615 ILCS 5/5 et seq.
- (b) No permit from IDNR/OWR shall be required if IDNR/OWR has delegated this responsibility to the (City, Village).

802.6 Permits for Dams

- (a) Any work involving the construction, modification or removal of a dam as defined in Section 300.12 per 92 Ill. Adm. Code Part 702 (Rules for Construction of Dams) shall obtain an IDNR/OWR permit prior to the start of construction of a dam.
- (b) If the \_\_\_\_\_ finds a dam that does not have an IDNR/OWR permit, the \_\_\_\_\_ shall immediately notify the IDNR/OWR Schaumburg office.

*appropriate uses. The minimum state requirements allow such modifications to facilitate development. If the adopted ordinance permits such modifications, they should be subject to the construction and mitigation requirements of this section.*

This section may be deleted if a community has not been delegated state permitting authority in the designated floodway.

For information regarding delegation, contact the IDNR/OWR -Northeastern Illinois Regulatory Programs Section at (847) 705-4341.

*Many activities in floodways will require a permit from the U.S. Army Corps of Engineers. In particular, the Corps regulates fill activities in "waters of the United States," which include most stream channels and wetlands. As a rule, a development permit should not be issued for a fill or related activity in the floodway until the applicant has received a permit or signoff from the Corps.*

If IDNR/OWR has delegated its permitting authority in the floodway to the community, then only those development activities in Section 802.4 would still require permits from IDNR/OWR.

List the title of the official responsible for administering the floodplain ordinance.

- (c) If the \_\_\_\_\_ finds a dam which is believed to be in unsafe condition, the \_\_\_\_\_ shall immediately notify the owner of the dam, the IDNR/OWR Schaumburg office, and the Illinois Emergency Management Agency (IEMA).

802.7 Activities That Do Not Require a Registered Professional Engineer's Review.

The following activities may be permitted without a registered professional engineer's review. Such activities shall still meet the other requirements of this Ordinance, including the mitigation requirements.

(a) Underground and overhead utilities that:

- i. Do not result in any increase in existing ground elevations, or
- ii. Do not require the placement of above ground structures in the floodway, or
- iii. In the case of underground stream crossings, the top of the pipe or encasement is buried a minimum of 3' below the existing streambed, and
- iv. Overhead utility lines shall be constructed above the estimated 100-year frequency flood elevation or attached above the low chord of an existing bridge (with the permission of the bridge owner). No supporting towers shall be placed in the watercourse and shall be designed so as to not catch debris.
- v. Disturbance of streamside vegetation shall be kept to minimum during construction to prevent erosion and sedimentation. All disturbed floodway areas, including the stream banks shall be restored to their original contours and seeded or otherwise stabilized upon completion of construction.
- vi. A utility crossing carrying material which may cause water pollution as defined by the Environmental Protection Act 415 ILCS 5 (1992 State Bar Edition) shall be provided with shut-off valves on each side of the body of water to be crossed.
- vii. All Illinois Commerce Commission, National Electric Safety Codes, and federal requirements for clearance must be met.

(b) Storm and sanitary sewer relief outfalls that:

- i. Do not extend riverward or lakeward of the existing adjacent natural bank slope, and
- ii. Do not result in an increase in ground elevation,

List the title of the official responsible for administering the floodplain ordinance.

*Local governments are encouraged to evaluate these exemptions and delete any which, based on local experience, should be subject to a professional engineer's review.*



- iii. Are designed so as not to cause stream erosion at the outfall location.
- (c) Construction of sidewalks, athletic fields (excluding fences), properly anchored playground equipment and patios at grade.
- (d) Construction of shoreline and streambank protection that:
  - i. Does not exceed 1000 feet in length.
  - ii. Materials are not placed higher than the existing top of bank.
  - iii. Materials are placed so as not to reduce the cross-sectional area of the stream channel or bank of the lake.
  - iv. *Stabilization utilizing native vegetation and gradual side slopes are the preferred mitigation methods for existing erosion problems. Where high channel velocities, sharp bends or wave action necessitate the use of alternative stabilization measures, soil bioengineering techniques, natural rock or rip-rap are preferred materials. Artificial materials such as concrete, construction rubble, and gabions should be avoided unless there are no practicable alternatives.*
- (e) Temporary stream crossings in which:
  - i. The approach roads will be 1/2 foot or less above natural grade.
  - ii. The crossing will allow stream flow to pass without backing up the water above the stream bank vegetation line or above any drainage tile or outfall invert.
  - iii. The top of the roadway fill in the channel will be at least 2' below the top of the lowest bank. *Any fill in the channel shall be non-erosive material, such as rip-rap or gravel.*
  - iv. All disturbed stream banks will be seeded or otherwise stabilized as soon as possible upon installation and again upon removal of construction.
  - v. The access road and temporary crossings will be removed within one year after authorization.

*Stabilization activities involving 1000 feet or less of shoreline or streambank, and which utilize vegetative or soil bioengineering techniques, need not be subject to the review of a registered professional engineer. However, "artificial" methods, such as concrete lining or gabions, which are likely to increase conveyance and potentially exacerbate erosion and/or flooding downstream, should be subject to the review of a registered professional engineer.*

## Section 900.0 Occupation and Use of SFHA Areas Where Floodways Are Not Identified.

In SFHA or floodplains, (including AE, AH, AO and Unnumbered A Zones ) where no floodways have been identified and no base flood or 100-year frequency flood elevations have been established by FEMA, and draining more than a square mile, no development shall be permitted unless the cumulative effect of the proposals, when combined with all other existing and anticipated uses and structures, shall not significantly impede or increase the flow and passage of the floodwaters nor significantly increase the base flood or 100-year frequency flood elevation.

### 901.0 Development Permit.

- 901.1 No person, firm, corporation, or governmental body, not exempted by state law, shall commence any development in a SFHA or floodplain without first obtaining a development permit from the \_\_\_\_\_.
- 901.2 Application for a development permit shall be made on a form provided by the \_\_\_\_\_.
- (a) The application shall be accompanied by drawings of the site, drawn to scale showing property line dimensions; and existing grade elevations and all changes in grade resulting from excavation or filling, sealed by a licensed engineer, architect or surveyor; the location and dimensions of all buildings and additions to buildings; and the elevations of the lowest floor (including basement) of all proposed buildings subject to the requirements of Section 1000.0 of this Ordinance.
- (b) The application for a development permit shall also include the following information:
- A detailed description of the proposed activity, its purpose, and intended use;
  - Site location (including legal description) of the property, drawn to scale, on the designated floodway maps, indicating whether it is proposed to be in an incorporated or unincorporated area;
  - Anticipated dates of initiation and completion of activity;

This section explains the procedures for determining whether a parcel is in a floodplain, where no detailed analysis has been completed; and how to determine whether development would be allowed. It also sets minimum development standards within the zone.

*Floodways Not Identified: The floodways of a substantial number of urban channels in northeastern Illinois have not been identified on regulatory maps. It is recommended that these areas be regulated in a conservative manner by defining an interim floodway as part of the permit process for any proposed construction in this area. This section already requires that the applicant delineate the floodway under existing and proposed conditions. If this interim delineation indicates that the proposed activity is in the floodway, then the activity should be subject to the requirements of Section 800.0. In particular, only appropriate uses would be permitted and all activities would be subject to the construction and mitigation criteria. Activities in floodplain areas outside the delineated floodway would be subject to the flood fringe requirements of Section 700.0.*

NFIP requirement: 44 CFR 60.3(b)(1).

List the title of the official responsible for administering the floodplain ordinance.

List the title of the official responsible for administering the floodplain ordinance.



- iv. Plans of the proposed activity shall be provided which include as a minimum:

- (1) A vicinity map showing the site of the activity, name of the waterway, boundary lines, names of roads in the vicinity of the site, graphic or numerical scale, and north arrow;
- (2) A plan view of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the structure or work, elevations in mean sea level (1929 adjustment) datum or N.G.V.D., adjacent property lines and ownership, drainage and flood control easements, distance between proposed activity and navigation channel (when the proposed construction is in or near a commercially navigable body of water), floodplain limit, location and orientation of cross-sections, north arrow, and a graphical or numerical scale;
- (3) Cross-section views of the project perpendicular to the flow of floodwater and engineering study reach showing existing and proposed conditions including principal dimensions of the work as shown in plan view, existing and proposed elevations, normal water elevation, 10-year frequency flood elevation, 100-year frequency flood elevation, and graphical or numerical scales (horizontal and vertical); and
- (4) *A soil erosion and sedimentation control plan for disturbed areas. This plan shall include a description of the sequence of grading activities and the temporary sediment and erosion control measures to be implemented to mitigate their effects. This plan shall also include a description of final stabilization and revegetation measures, and the identification of a responsible party to ensure post-construction maintenance.*

- (c) Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the criteria of Section 902.0.

- (d) Any and all other federal, state, and local permits or approvals that may be required for this type of development.

901.3 Based on the best available existing data according to the Illinois State Water Survey's Floodplain Information Repository, the \_\_\_\_\_ shall compare the elevation of the site to the base flood or 100-year frequency flood elevation.

*Required plans should include a delineation of the floodway for both the existing and proposed conditions. This floodway delineation, made by the applicant, should be consistent with the requirements of Section 600.0, Base Flood Elevation and Section 300.13, definition of the Designated Floodway. Floodplain and floodway delineations should be based on anticipated future watershed land use conditions (see Section 604.2). This delineation should be verified and approved by IDNR/OWR.*

List the title of the official responsible for administering the floodplain ordinance.

- (a) Should no elevation information exist for the site, the developer's engineer shall calculate the elevation according to Section 604.0.
- (b) Any development located on land that can be shown to have been higher than the base flood elevation of the current Flood Insurance Rate Map Identification is not in the SFHA and, therefore, not subject to the requirements of this Ordinance.
- (c) The Building Official shall maintain documentation of the existing ground elevation at the development site and certification that this ground elevation existed prior to the date of the site's first Flood Insurance Rate Map identification.

901.4 The \_\_\_\_\_ shall be responsible for obtaining from the applicant copies of all other federal, state, and local permits, approvals or permit-not-required letters that may be required for this type of activity. The \_\_\_\_\_ shall not issue the development permit unless all required federal, state, and local permits have been obtained.

## 902.0 Preventing Increased Damages.

902.1 No development in the SFHA, where a floodway has not been determined shall create a damaging or potentially damaging increase in flood heights or velocity or threat to public health, safety *and welfare or impair the natural hydrologic and hydraulic functions of the floodway or channel, or impair existing water quality or aquatic habitat. Construction impacts shall be minimized by appropriate mitigation methods as called for in this Ordinance.*

902.2 Within all riverine SFHA's where the floodway has not been determined, the following standards shall apply:

- (a) The developer shall have a Registered Professional Engineer state in writing and show through supporting plans, calculations, and data that the project meets the engineering requirements of Section 802.3 (a) through (l) for the entire floodplain as calculated under the provisions of Section 604.0 of this Ordinance.
  - i. As an alternative, the developer should have an engineering study performed to determine a floodway and submit that engineering study to IDNR/OWR for acceptance as a designated floodway.
  - ii. Upon acceptance of the floodway by IDNR/OWR, the developer shall then demonstrate that the project meets the requirements of Section 800.0 for the designated floodway. The floodway shall be defined according to the definition in Section 300.13 of this Ordinance.

Such a project will still be subject to the flood insurance purchase requirements unless the owner appeals to amend the FIRM.

NFIP requirement: 44 CFR 60.3(a)(2).

List the title of the official responsible for administering the floodplain ordinance.

NFIP requirement: 44 CFR 60.3(a)(4)(i), 60.3(c)(10) and 60.3(d)(3).

*Within all SFHA's where a regulatory floodway has not been defined, it is recommended that an interim floodway be defined by the applicant for purposes of this Ordinance. This interim floodway would be subject to the appropriate use, engineering and mitigation requirements of Section 800.0. A suggested interim floodway determination approach was discussed in the commentary to Section 900.0 above. As a minimum, all channels with the SFHA should be considered floodways for purposes of this Ordinance.*



- (b) A development permit shall not be issued unless the applicant first obtains a permit from IDNR/OWR or written documentation that a permit is not required from IDNR/OWR.
- (c) No permit from IDNR/OWR shall be required if IDNR/OWR has delegated permit responsibility to the (City, Village) per 92 Ill. Adm. Code Part, Part 708 for designated floodways.

(d) Permits for Dams

- i. Any work involving the construction, modification or removal of a dam as defined in Section 300.12 per 92 Ill. Adm. Code Part 702 (Rules for Construction of Dams) shall obtain an IDNR/OWR permit prior to the start of construction of a dam.
- ii. If the \_\_\_\_\_ finds a dam that does not have an IDNR/OWR permit, the \_\_\_\_\_ shall immediately notify the IDNR/OWR Schaumburg office.
- iii. If the \_\_\_\_\_ finds a dam which is believed to be in unsafe condition, the \_\_\_\_\_ shall immediately notify the owner of the dam, the IDNR/OWR Schaumburg office, and the Illinois Emergency Management Agency (IEMA).

List the title of the official responsible for administering the floodplain ordinance.

902.3 The following activities may be permitted without a Registered Professional Engineer's review or calculation of a base flood elevation and designated floodway. Such activities shall still meet the other requirements of this Ordinance:

(a) Underground and overhead utilities that:

- i. Do not result in any increase in existing ground elevations, or
- ii. Do not require the placement of above ground structures in the floodway, or
- iii. In the case of underground stream crossings, the top of the pipe or encasement is buried a minimum of 3' below the existing streambed, and
- iv. Overhead utility lines shall be constructed above the estimated 100-year frequency flood elevation or attached above the low chord of an existing bridge (with the permission of the bridge owner). No supporting towers shall be placed in the watercourse and shall be designed so as to not catch debris.
- v. Disturbance of streamside vegetation shall be kept to minimum during construction to prevent erosion and sedimentation.

902.3(a)

- vi. A utility crossing carrying material which may cause water pollution as defined by the Environmental Protection Act 415 ILCS 5 (1992 State Bar Edition) shall be provided with shut-off valves on each side of the body of water to be crossed.
  - vii. All Illinois Commerce Commission, National Electric Safety Codes, and federal requirements for clearance must be met.
- (b) Storm and sanitary sewer relief outfalls that:
- i. Do not extend riverward or lakeward of the existing adjacent natural bank slope, and
  - ii. Do not result in an increase in ground elevation, and
  - iii. Are designed so as not to cause stream erosion at the outfall location.
- (c) Construction of shoreline and streambank protection that:
- i. Does not exceed 1000 feet in length.
  - ii. Materials are not placed higher than the existing top of bank.
  - iii. Materials are placed so as not to reduce the cross-sectional area of the stream channel by more than 10 percent.
  - iv. *Stabilization utilizing native vegetation and gradual side slopes are the preferred mitigation methods for existing erosion problems. Where high channel velocities, sharp bends or wave action necessitate the use of alternative stabilization measures, soil bioengineering techniques, natural rock or rip-rap are preferred materials. Artificial materials such as concrete, construction rubble, and gabions should be avoided unless there are no practicable alternatives.*
- (d) Temporary stream crossings in which:
- i. The approach roads will be 1/2 foot or less above natural grade.
  - ii. The crossing will allow stream flow to pass without backing up the water above the stream bank vegetation line or above any drainage tile or outfall invert.

*Use of artificial shoreline and streambank materials for the convenience of site design for private developments is not supported. Construction activities involving 1000 feet of shoreline or streambank are not minor and should be subject to the review of a registered professional engineer. NIPC recommends there be no reduction in the cross-sectional area of the channel.*



902.3(d)

- iii. The top of the roadway fill in the channel will be at least 2' below the top of the lowest bank. *Any fill in the channel shall be non-erosive material, such as rip-rap or gravel.*
- iv. All disturbed stream banks will be seeded or otherwise stabilized as soon as possible upon installation and again upon removal of construction.
- v. The access road and temporary crossings will be removed within one year after authorization.
- (e) The construction of light poles, sign posts and similar structures;
- (f) The construction of sidewalks, driveways, athletic fields (excluding fences), patios and similar surfaces which are built at grade;
- (g) The construction of properly anchored, unwall, open structures such as playground equipment, pavilions, and carports built at or below existing grade that would not obstruct the flow of flood waters;
- (h) The placement of properly anchored buildings not exceeding seventy (70) square feet in size, nor ten (10) feet in any one dimension (e.g., animal shelters and tool sheds);
- (i) The construction of additions to existing buildings which do not increase the first floor area by more than twenty (20) percent, which are located on the upstream or downstream side of the existing building, and which do extend beyond the sides of the existing building that are parallel to the flow of flood waters;
- (j) Minor maintenance dredging of a stream channel where:
  - i. The affected length of stream is less than 1000 feet.
  - ii. The work is confined to reestablishing flows in natural stream channels, or
  - iii. The cross-sectional area of the dredged channel conforms to that of the natural channel upstream and downstream of the site.

*NIPC policy discourages the building of any unnecessary private buildings in the floodway.*

*NIPC policy discourages the building of any unnecessary private buildings in the floodway.*

902.4 The flood carrying capacity within any altered or relocated watercourse shall be maintained.

## 902.5 Compensatory Storage.

- (a) Whenever any portion of a floodplain is authorized for use, the volume of space which will be occupied by the authorized fill or structure below the base flood or 100-year frequency flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood or 100-year frequency flood elevation.
- (b) The excavation volume shall be at least equal to *1.5 times* the volume of storage lost due to the fill or structure.
- (c) In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied.
- (d) All floodplain storage lost below the existing 10-year flood elevation shall be replaced below the proposed 10-year flood elevation. All floodplain storage lost above the existing 10-year flood elevation shall be replaced above the proposed 10-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse.

*Compensatory Storage. NIPC policy supports the requirement for a safety factor for compensatory storage equal to at least 1.5 times the volume of storage lost due to fill or structures. This safety factor is intended to compensate for uncertainties in the estimate of the base flood elevation and in the determination of project impacts.*

If the municipality owns a regional flood control or stormwater storage facility, and has a plan for developing additional storage at the facility, the municipality may prefer to offer developers of isolated single lots, one quarter acre or smaller in size, the ability to provide hydraulically equivalent storage in the regional facility as an alternative to providing on-site compensatory storage. It would need to be shown through the use of hydrologic and hydraulic models, however, that the additional storage created in the regional facility is hydraulically equivalent to the storage lost at the development site.

This section sets minimum development standards within all floodplain zones.

## Section 1000.0 Permitting Requirements Applicable to All Floodplain Areas.

In addition to the requirements found in Sections 700.0, 800.0 and 900.0 for development in flood fringes, designated floodways, and SFHA or floodplains where no floodways have been identified (Zones A, AO, AH, AE, A1-A30, A99, VO, V1-30, VE, V, M, E, D, or X), the following requirements shall be met.

### 1001.0 Public Health Standards

- 1001.1 No developments in the SFHA shall include locating or storing chemicals, explosives, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials below the flood protection elevation (FPE).
- 1001.2 New and replacement water supply systems, wells, sanitary sewer lines and on-site waste disposal systems may be permitted providing all manholes or other above ground openings located below the FPE are watertight.

NFIP requirement: 44 CFR 60.3(a)(6).

*NIPC policy does not support wells, new sanitary sewer lines (except interceptor sewers) or on-site waste disposal systems in the floodway.*

### 1002.0 Carrying Capacity and Notification.

- 1002.1 For all projects involving channel modification, fill, or stream maintenance (including levees), the flood carrying capacity of the watercourse shall be maintained.

*NIPC policy supports such modifications or fills only for appropriate uses, where necessary.*



- 1002.2 In addition, the (City, Village) shall notify adjacent communities in writing 30 days prior to the issuance of a permit for the alteration or relocation of the watercourse.

### 1003.0 Protecting Buildings.

- 1003.1 All buildings located within a 100-year floodplain also known as a SFHA, *and all buildings located outside the 100-year floodplain but within the 500-year floodplain*, shall be protected from flood damage below the flood protection elevation. This building protection criteria applies to the following situations:

- (a) Construction or placement of a new building.
- (b) A structural alteration to an existing building that either increases the first floor area by more than 20 percent or the building's market value by more than 50 percent. *This alteration shall be figured cumulatively beginning with any alteration which has taken place subsequent to April 1, 1990.*
- (c) Installing a manufactured home on a new site or a new manufactured home on an existing site. This building protection requirements does not apply to returning a mobile home to the same site it lawfully occupied before it was removed to avoid flood damage; and
- (d) Installing a travel trailer on a site for more than 180 days.

This building protection requirement may be met by one of the following methods.

- 1003.2 A residential or non-residential building, when allowed, may be constructed on permanent land fill in accordance with the following:

- (a) The lowest floor (including basement) shall be at or above the flood protection elevation.
- (b) Fill Requirements.
  - i. The fill shall be placed in layers no greater than one (1) foot deep before compaction and should extend at least ten (10) feet beyond the foundation of the building before sloping below the flood protection elevation.

For communities that would like to restrict the expansion or additions to existing buildings in the floodplain, it is suggested that the following language be substituted for Section 1003.1 (b):

Nonconforming structures may remain in use, but shall not be enlarged, replaced or structurally altered. A nonconforming structure damaged by flood, fire, wind or other man-made or natural disaster may be restored unless the damage exceeds fifty percent (50 percent) of its market value. In which case, it must, thereafter, conform to this Ordinance.

Community Rating System (CRS) points can be obtained by tracking cumulative substantial improvements.

*All buildings proposed at locations which are at or below the flood protection elevation should be elevated. In situations where a community has identified a flood protection elevation which is higher than the 100-year, or base flood, elevation (i.e., it has a freeboard requirement), its elevation requirements should, by definition, extend beyond the 100-year floodplain, or SFHA. The recommended requirement to elevate all buildings within the 500-year floodplain is derived from DuPage County's Stormwater and Floodplain Ordinance. An alternative would be to require the applicant to identify all building locations which are outside the 100-year floodplain and below the flood protection elevation and require protection/elevation of the building. In situations where the freeboard requirement is one foot or greater, this alternative approach is recommended since the 500-year floodplain generally will not extend far enough.*

NFIP requirement: 44 CFR 60.3(b)(5)(iii) and 59.22(a)(9)(iii).

NFIP requirement: 44 CFR 60.3(b)(4)(i) and 60.3(c)(2).

*The minimum recommended flood protection elevation (FPE) is one foot above the Base Flood Elevation. A number of communities in northeastern Illinois have more conservative requirements, such as 2 or 3 feet. It is recommended that a more conservative FPE be evaluated to provide a reasonable safety factor.*

1003.2(b)

- ii. The top of the fill shall be above the flood protection elevation. However, the ten (10) foot minimum may be waived if a structural engineer certifies an alternative method to protect the building from damages due to hydrostatic pressures.
- iii. The fill shall be protected against erosion and scour.
- iv. The fill shall not adversely affect the flow or surface drainage from or onto neighboring properties.

1003.3 A residential or non-residential building may be elevated in accordance with the following:

- (a) The building or improvements shall be elevated on crawl space, stilts, piles, walls, or other foundation that is permanently open to flood waters and not subject to damage by hydrostatic pressures of the base flood or 100-year frequency flood. The permanent openings shall be no more than one foot above existing grade, and consists of a minimum of two openings. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the Base Flood Elevation.
- (b) The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice and floating debris.
- (c) All areas below the flood protection elevation shall be constructed of materials resistant to flood damage.
  - i. The lowest floor (including basement) and all electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters shall be located at or above the flood protection elevation.
  - ii. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the flood protection elevation.
- (d) The areas below the flood protection elevation may only be used for the parking of vehicles, building access or storage in an area other than a basement.

NFIP requirement: 44 CFR 60.3(a)(3) and 60.3(c)(5).

The following language is required for ordinances adopted by communities within the jurisdiction of MWRDGC:

When the building wall encloses open space that is below the Base Flood Elevation, gravity storm and sanitary sewer connections are specifically prohibited and overhead



sewers are required for the sanitary connections and sumps for the storm sewer connections.

- (e) Manufactured homes, and travel trailers to be installed on a site for more than 180 days, shall be elevated to or above the flood protection elevation; and, shall be anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the Rules and Regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Adm. Code Part 870. In addition, all manufactured homes shall meet the following elevation requirements:

- i. In the case of manufactured homes placed or substantially improved (1) outside of a manufactured home park or subdivision, (2) in a new manufactured home park or subdivision, (3) in an expansion to an existing manufactured home park or subdivision, or (4) in an existing manufactured home park or subdivision on which a manufactured home has incurred substantial damage from a flood, the top of the lowest floor shall be elevated to or above the flood protection elevation.
- ii. In the case of manufactured homes placed or substantially improved in an existing manufactured home park or subdivision, the manufactured home shall be elevated so that either the top of the lowest floor is above the base flood elevation or the chassis is at least 36 inches in height above grade and supported by reinforced piers or other foundations of equivalent strength, whichever is less.

- (f) Recreational vehicles or travel trailers shall be required to meet the elevation and anchoring requirements of Subsection 1003.3(e) above unless:

- i. They are on site for fewer than 180 consecutive days; and,
- ii. They are fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utility and service devices, and has no permanently attached additions.

NFIP requirement: 44 CFR 60.3(b)(4)(ii) and 60.3(c)(3) and (4).

1003.4 Only a non-residential building may be structurally dry floodproofed (in lieu of elevation) provided that:

- (a) A registered professional engineer shall certify that the building has been structurally dry floodproofed below the flood protection elevation, the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood or 100-year frequency flood.
- (b) The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice.
- (c) Floodproofing measures shall be operable without human intervention and without an outside source of electricity (levees, berms, floodwalls and similar works are not considered floodproofing for the purpose of this subsection).

**1003.5 *Tool sheds and detached garages on an existing single-family platted lot, may be constructed with the lowest floor below the flood protection elevation in accordance with the following:***

- (a) *The building is not used for human habitation.*
- (b) *All areas below the base flood or 100-year frequency flood elevation shall be constructed with waterproof material. Structures located in a designated floodway shall be constructed and placed on a building site so as not to block the flow of flood waters and shall also meet the Appropriate Use criteria of Section 800.0. In addition, all other requirements of Section 700.0, 800.0 and 900.0 must be met.*
- (c) *The structure shall be anchored to prevent flotation.*
- (d) *Service facilities such as electrical and heating equipment shall be elevated or floodproofed to the flood protection elevation.*
- (e) *The building shall be valued at less than \$7,500 and be less than 500 square feet in floor size.*
- (f) *The building shall be used only for the storage of vehicles or tools and may not contain other rooms, workshops, greenhouses or similar uses.*
- (g) *The building shall meet the permanent opening criteria of Section 1003.3(a)*

NFIP requirement: 44 CFR 60.3(b)(4) and 60.3(c)(4).

Tool sheds and detached garages can be constructed below the flood protection elevation if Section 1003.5 is included in the community's ordinance. Communities desiring a more restrictive use of the floodplain, should omit this Section.

*NIPC policy discourages locating sheds and garages below the flood protection elevation for the following reasons: such structures will increase the potential for flood damages to equipment, machinery, and vehicles; and materials stored in such facilities may contribute to water quality contamination during flood events.*

*This figure must be the minimum necessary to construct a two car garage or tool shed.*



1003.6 Existing buildings located within a designated floodway shall also meet the more restrictive Appropriate Use standards included in Section 800.0. Non-conforming structures located in a designated floodway may remain in use and may only be enlarged, replaced or structurally altered in accordance with Section 802.0. A non-conforming structure damaged by flood, fire, wind or other natural or man-made disaster may be restored unless the damage exceeds fifty percent (50%) of its market value before it was damaged, in which case it shall conform to this Ordinance.

## **Section 1100.0 Other Development Requirements**

The (City Council or Board of Trustees) shall take into account flood hazards, to the extent that they are known in all official actions related to land management, use and development.

1101.0 New subdivisions, manufactured home parks, annexation agreements, and Planned Unit Developments (PUDs) within the SFHA shall be reviewed to assure that the proposed developments are consistent with Sections 700.0, 800.0, 900.0 and 1000.0 of this Ordinance and the need to minimize flood damage. Plats or plans for new subdivisions, mobile home parks and Planned Unit Developments (PUDs) shall include a signed statement by a Registered Professional Engineer that the plat or plans account for changes in the drainage of surface waters in accordance with the Plat Act (765 ILCS 205/2).

1102.0 Proposals for new subdivisions, manufactured home parks, travel trailer parks, planned unit developments (PUDs) and additions to manufactured home parks and additions to subdivisions shall include base flood or 100-year frequency flood elevation data and floodway delineations.

1102.1 Where this information is not available from an existing study filed with the Illinois State Water Survey, the applicant's engineer shall be responsible for calculating the base flood or 100-year frequency flood elevation per Section 604.0 and the floodway delineation per the definition in Section 300.13

1102.2 The applicant's engineer shall submit the data to IDNR/OWR for review and approval as best available regulatory data and then send it to the State Water Survey.

1103.0 Streets, blocks, lots, parks and other public grounds shall be located and laid out in such a manner as to preserve and utilize natural streams and channels. Wherever possible, the floodplains shall be included within parks or other public grounds.

This section sets minimum subdivision design review, and recording standards, when the subdivisions are located within a floodplain.

NFIP requirement: 44 CFR 60.1(c).

NFIP requirement 44 CFR 60.3(b)(3) only requires this for subdivisions greater than 5 acres or 50 lots.

All new plats recorded must show the location of any SFHA which appears on the plat and must be signed, sealed, and certified by an Illinois Registered Land Surveyor as per the requirements of Public Act 85-267.

- 1104.0 The (City Council, Board of Trustees, County Board) shall not approve any Planned Unit Development (PUD) or plat of subdivision located outside the corporate limits unless such agreement or plat is in accordance with the provisions of this Ordinance.

## Section 1200.0 Variances

- 1201.0 No variances shall be granted to any development located in a designated floodway as defined in Section 300.13.
- 1201.1 Whenever the standards of this Ordinance place undue hardship on a specific development proposal, the applicant may apply to the \_\_\_\_\_ for a variance.
- 1201.2 The \_\_\_\_\_ shall review the applicant's request for a variance and shall submit its recommendation to the (City Council, Board of Trustees).

This section explains the criteria for a floodplain variance and explains the procedure which the community must follow when granting a variance.

NFIP guidelines: 44 CFR 60.6(a).

Communities in the NFIP are required to maintain a record of all variance actions, including justification for their issuance, and report them to FEMA in the Biennial Report. FEMA may review variances and may take compliance action against a community if the review "indicates a pattern inconsistent with the objectives of sound floodplain management...."

*If a city/village adopts NIPC language which prohibits changing the regulatory floodway to facilitate development related to a non-appropriate use, it has precluded certain development activities in the existing floodway which are allowable under state rules. Such a floodway modification activity should be made eligible for the variance procedure described in this section if an exceptional hardship would otherwise result.*

*Similarly, if the city/village adopts NIPC language for mitigation (including soil erosion and sedimentation control, channel protection, vegetated buffer strips, etc.) which goes beyond the minimum state requirements, such requirements also should be eligible for the variance procedure described in this section if an exceptional hardship would otherwise result. All such variances must meet the minimum state requirements for appropriate uses and are otherwise subject to the requirements of Sections 700.0, 800.0 and 900.0. In no case shall a variance from the minimum State requirements of Section 800.0 be considered for any development activity.*

*A city/village which adopts requirements for floodway development which are more restrictive than state requirements, and which chooses to provide the opportunity for variances for such restrictions, should draft variance language which specifically references the more restrictive requirements. This language should be inserted into Section 1200.0 after the first sentence. Suggested language follows: "However, the following Ordinance requirements for floodway development, which are more restrictive than minimum state requirements shall be eligible for variance considerations: Sections \_\_\_\_\_, etc."*



1202.0 No variance shall be granted unless the applicant demonstrates that:

1202.1 The development activity cannot be located outside the SFHA;

1202.2 An exceptional hardship would result if the variance were not granted;

1202.3 The relief requested is the minimum necessary;

1202.4 There will be no additional threat to public health, safety, *beneficial stream uses and functions, especially aquatic habitat, or creation of a nuisance*;

1202.5 There will be no additional public expense for flood protection, *lost environmental stream uses and functions*, rescue or relief operations, policing, or repairs to *streambeds and banks*, roads, utilities, or other public facilities;

1202.6 The provisions of Sections 702.0 and 902.0 of this Ordinance shall still be met;

1202.7 The activity is not in a designated floodway;

1202.8 The applicant's circumstances are unique and do not represent a general problem, and;

1202.9 *The granting of the variance will not alter the essential character of the area involved including existing stream uses.*

1203.0 The \_\_\_\_\_ shall notify an applicant in writing that a variance from the requirements of Section 1000.0 that would lessen the degree of protection to a building will:

1203.1 Result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage;

1203.2 Increase the risks to life and property; and

1203.3 Require that the applicant proceed with knowledge of these risks and that he will acknowledge in writing that he assumes the risk and liability.

*The blanks in Subsections 1201.1 and 1201.2 should be filled in with the title of the body reviewing requests for variances (e.g. the Plan Commission or the Zoning Board of Appeals).*

As much as possible the variance procedure should be tied to existing zoning or building code variance procedure.

*The criteria for granting a variance should recognize and include the fact that there are legitimate stream uses and functions which may be adversely affected by the granting of the variance. These uses include aesthetics, aquatic habitat and recreation. Since these uses have a definite, though difficult to quantify, economic value, the applicant should demonstrate that these uses will not be impaired by the proposed activity as part of the application for a variance.*

These provisions still prohibit the placement of inappropriate uses in the floodway, meaning a variance for such placement cannot be obtained.

*65 ILCS 5/11-13-4 and 5/11-13-5 establishes specific municipal zoning variance criteria.*

*1202.8 and 1202.9 are based on those criteria which are an essential component of all municipal zoning ordinances.*

NFIP guidelines: 44 CFR 60.6(a)(5).

List the title of the official responsible for administering the floodplain ordinance.

An insurance agent can estimate the rate increase for specific projects (Example: for a new slab on grade home, with the top of the lowest floor four feet below the Base Flood Elevation, flood insurance could cost about \$50.00 per \$1000.00 of coverage).

The Standard Flood Insurance Policy permits an insurance adjuster to not pay for damage that was caused by something the owner did which increased the hazard to the property. Section 1316 of the National Flood Insurance Act authorizes local officials



1204.0 Variances requested in connection with restoration of a historic site or historic structure as defined in 300.30 "Historic Structures", may be granted using criteria more permissive than the requirements of Sections 1200.2 and 1200.3, subject to the conditions that:

1204.1 The repair or rehabilitation is the minimum necessary to preserve the historic character and design of the structure; and,

1204.2 The repair or rehabilitation will not result in the structure being removed as a certified historic structure.

### Section 1300.0 Disclaimer of Liability

1301.0 The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on available information derived from engineering and scientific methods of study.

1302.0 Larger floods may occur or flood heights may be increased by man-made or natural causes.

1303.0 This Ordinance does not imply that development, either inside or outside of the SFHA, will be free from flooding or damage.

1304.0 This Ordinance does not create liability on the part of the (City, Village) or any officer or employee thereof for any flood damage that results from reliance on this Ordinance or any administrative decision made lawfully thereunder.

### Section 1400.0 Penalty

Failure to comply with the requirements of a permit or conditions of a variance resolution shall be deemed to be a violation of this Ordinance. Upon due investigation, the \_\_\_\_\_ may determine that a violation of the minimum standards of this Ordinance exist. The \_\_\_\_\_ shall notify the owner in writing of such violation.

1401.0 If such owner fails after ten days notice to correct the violation:

1401.1 The (City, Village) may make application to the Circuit Court for an injunction requiring conformance with this Ordinance or make such other order as the Court deems necessary to secure compliance with the Ordinance.

1401.2 Any person who violates this Ordinance shall, upon conviction thereof, be fined not less than fifty dollars (\$50.00) or more than one-thousand dollars (\$1,000.00) for each offense.

1401.3 A separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.

to request denial of flood insurance for buildings in violation of local floodplain codes.

Contact the Illinois Historic Preservation Agency at (217) 785-1153 for more information.

This section explains that this Ordinance does not guarantee that flood damage will not occur, and that the municipality, county, or enforcing official is not liable for decisions made lawfully under this Ordinance.

This section explains the penalty for not abiding by this Ordinance, and explains what actions the enforcement official may take in seeking compliance.

List the title of the official responsible for administering the floodplain ordinance.

A community may wish to treat a violation as a misdemeanor, in order to reinforce the necessity for compliance.

*The fine amounts are the minimum recommended by IDNR/OWR.*

Consideration should be given to increasing these suggested fine amounts. Certain violations can potentially lead to substantial off-site damages (e.g., increased flooding or sedimentation) and should be treated accordingly.



1401.4 The (City, Village) may record a notice of violation on the title to the property.

1402.0 The \_\_\_\_\_ shall inform the owner that any such violation is considered a willful act to increase flood damages and, therefore, may cause coverage by a Standard Flood Insurance Policy to be suspended.

1402.1 The \_\_\_\_\_ is authorized to issue an order requiring the suspension of the subject development. The stop-work order shall be in writing, shall indicate the reason for the issuance, and shall order the action, if necessary, to resolve the circumstances requiring the stop-work order. The stop-work order constitutes a suspension of the permit

1402.2 No site development permit shall be permanently suspended or revoked until a hearing is held by the (Board of Appeals). Written notice of such hearing shall be served on the permittee and shall state: (1) the grounds for complaint or reasons for suspension or revocation; and (2) the time and place of the hearing. At such hearing, the permittee shall be given an opportunity to present evidence on his/her behalf. At the conclusion of the hearing, the (Board of Appeals) shall determine whether the permit shall be suspended or revoked.

1403.0 Nothing herein shall prevent the (City, Village) from taking such other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person or persons responsible.

## Section 1500.0 Abrogation and Greater Restrictions

1501.0 This Ordinance is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions.

1502.0 Where this Ordinance and other ordinance, easements, covenants, or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

1503.0 This Ordinance is intended to repeal the original ordinance or resolution which was adopted to meet the National Flood Insurance Program regulations, but is not intended to repeal the resolution which the (City, Village) passed in order to establish initial eligibility for the program.

## Section 1600.0 Separability

The provisions and sections of this Ordinance shall be deemed separable and the invalidity of any portion of this Ordinance shall not affect the validity of the remainder.

List the title of the official responsible for administering the floodplain ordinance.

A stop-work order should be issued if the development is proceeding in a manner which creates an imminent hazard of severe harm to persons or property (e.g., an unauthorized fill in the floodplain); or development has been accomplished in violation of the requirements of this Ordinance and a period of at least 15 days has elapsed since the permittee has received written notice of violation; or the development is proceeding without a permit.

This section explains which Ordinances are repealed when this Ordinance is adopted.

NFIP requirement: 44 CFR 60.1(b). This section should include a list of the specific ordinances that are repealed by this new Ordinance.

This section explains that if one part of this Ordinance is ruled to be invalid by the courts, the remainder of this ordinance is still in effect.

### Section 1700.0 Effective Date

This Ordinance shall be in full force and effect from and after its passage and approval and publication, as required by law.

PASSED by the \_\_\_\_\_ of the \_\_\_\_\_ of

\_\_\_\_\_, Illinois, this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
Clerk

APPROVED by me this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
Mayor

ATTESTED and FILED in my office this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
Clerk

This section sets the date when this Ordinance goes into effect and contains sections which the authorized officials must sign to approve the passage of this Ordinance.





